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ABSTRACT

In 1992, the U.S. Department of Labor and Council of Chief State School Officers awarded grants for the development of statewide systems to enhance school-to-work transition (SWT) through youth apprenticeship in eight states: California, Iowa, Maine, Michigan, Oregon, Pennsylvania, West Virginia, and Wisconsin. In June 1993, the programs were evaluated with respect to five areas: program elements contributing to state-based SWT systems; state-level governance mechanisms facilitating working relationships among secondary and postsecondary education agencies, state labor and employment agencies, registered apprenticeship, employers, and labor organizations; state actions promoting systemic change in local schools and school districts; state actions facilitating employer involvement in system development and provision of work-based learning opportunities; and contribution of national demonstration grants to development of state systems. Site visits, interviews, and reviews of state plans and reports established that all eight states saw development of SWT systems as responding to the same broad educational and economic goals; however, the states varied in the emphasis placed on each goal. Problems in developing states' capacity for systemic reform and lessons for current programming were identified. (Appended are state data summaries. Contains 17 references and 14 tables.) (MN)

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YOUTH APPRENTICESHIP IMPROVE TRANSITION WORK

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Using
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to
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the
TRANSITION
to
WORK

AN EVALUATION OF SYSTEM DEVELOPMENT IN EIGHT STATES

1994

COUNCIL OF CHIEF STATE SCHOOL OFFICERS (CCSSO)

The Council of Chief State School Officers (CCSSO) is a nationwide non-profit organization of the 57 public officials who head departments of public education in every state, the District of Columbia, the Department of Defense Dependents Schools, and five extra-state jurisdictions. CCSSO seeks its members' consensus on major educational issues and expresses their view to civic and professional organizations, federal agencies, Congress, and the public. Through its structure of standing and special committees, the Council responds to a broad range of concerns about education and provides leadership on major education issues.

Because the Council represents the chief education administrators, it has access to the educational and governmental establishment in each state and to the national influence that accompanies this unique position. CCSSO forms coalitions with many other education organizations and is able to provide leadership for a variety of policy concerns that affect elementary and secondary education. Thus, CCSSO members are able to act cooperatively on matters vital to the education of America's young people.

The CCSSO Resource Center on Educational Equity provides services designed to achieve equity and high-quality education for minorities; women and girls; and disabled, limited-English-proficient, and low-income students. The Center is responsible for managing and staffing a variety of CCSSO leadership initiatives to ensure education success for all children and youth, especially those placed at risk of school failure.

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**USING YOUTH APPRENTICESHIP TO IMPROVE THE TRANSITION TO WORK:
AN EVALUATION OF SYSTEM DEVELOPMENT IN EIGHT STATES**

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*T*he administrators, employers, educators, training officials, and others involved in designing and implementing improved approaches to school-to-work transition are busy people, and we are grateful that those working in the eight sample states somehow took the time to respond thoughtfully to our many questions.

In addition, we wish to extend special thanks to Daniel Wilttrout of the Council of Chief State School Officers, who participated in the collection and analysis of data on state activities and final editing of the document for publication. We also thank his colleagues, Glenda Partee and Cynthia Brown, who made valuable contributions to the design and execution of this study, as did Christopher Harris, a former Council staff member who conceived and initiated the study.

Several people in the U.S. Department of Labor contributed to the study in important ways. They include Janet Pease Moore and Irene Lynn, who each provided oversight and suggestions at critical points in the research. Eileen Pederson provided useful comments on the draft report.

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Although we thank all these people for their contributions, the authors are solely responsible for the conclusions in this report and for any errors it contains.

*I*n 1991, the Council of Chief State School Officers placed its highest priority on the topic of connecting school and employment. The Council published a policy paper and several reports and called for improved paths for American youth to prepare for productive employment; the restructuring of schools to support this objective; and new responsibilities for schools, businesses, employee organizations, and postsecondary institutions to establish sound career preparation patterns for the majority of our youth.

The centerpiece of the Council efforts for connecting school and employment has been the two-stage competitive grant program of planning and implementation grants through which the design work of state system change was initiated and operationalized. Encouraging the creation of statewide systems of youth apprenticeships, the **New Career Paths Through Youth Apprenticeship** project was funded from four sources: The Pew Charitable Trusts, the Charles Stewart Mott and the Exxon Education Foundations, for the state grant programs; and the U.S. Department of Labor, for technical assistance and an independent evaluation of the state grant program. These projects reached the end of their grants in April of 1993. Also, during 1992-93, the U.S. Department of Labor had awarded separate grants to states and local sites for developing systems and programs of youth apprenticeship. The state grantee programs were the focus of the evaluation study presented in this document.

This publication reflects the plans and experiences of state-level educators, employers, and labor leaders in their efforts to bring into being statewide youth apprenticeship systems. It provides guidance from experience in states striving, with a modicum of funding, to respond to the issues that must be addressed and providing the resources that must be assembled if coherent systems for youth development and career preparation are to be developed.

Policy Studies Associates conducted this independent study and prepared the final report for the Council and the U.S. Department of Labor. The report is candid in its findings and direct in raising the challenges states face in bringing about large-scale systems reform. It describes progress and successful new ventures in the eight study states: California,

Iowa, Maine, Michigan, Oregon, Pennsylvania, West Virginia, and Wisconsin.

The report provides a "snapshot" of the progress of eight states in a fast-moving policy domain. It is developed from documents and field interviews conducted in the spring of 1993. Much has happened in those states, indeed in all states, since the study was conducted. All states now are developing plans for school-to-work-opportunity systems, including youth apprenticeships. At the time of the study, these eight states were among the leaders, taking the risks by doing things in a new way.

At a time when guidance is essential to prepare states for implementing the proposed federal School-to-Work Opportunities Act, we offer this report, in collaboration with the U.S. Department of Labor. It presents practical field experience that can inform state efforts to implement systems that better connect school and employment options for all students.

Gordon M. Ambach
Executive Director
Council of Chief State School Officers

*I*n response to a growing national interest in improving youth transition to employment, both the U.S. Department of Labor (DOL) and the Council of Chief State School Officers (CCSSO) awarded grants in 1992 for the development of statewide systems to enhance school-to-work transition through youth apprenticeship. Although conceived and administered separately, both programs sought to support state governments in designing and establishing comprehensive systems that would involve state and local agencies, employers, secondary and postsecondary education, and labor organizations in assisting young people to make successful transitions from school to high-skill, high-wage employment. The programs awarded one-year demonstration grants to eight states: California, Iowa, Maine, Michigan, Oregon, Pennsylvania, West Virginia, and Wisconsin.

National interest in youth transition to employment has arisen in part as a result of the changes in the U.S. economy that have created a growing wage disparity between college graduates and the 75 percent of American young people who do not complete a baccalaureate degree. To address problems associated with these disparities, policymakers have called for changes in the opportunities available to young people in making the transition from schooling to employment. Central to these changes are new activities designed to expose young people to career opportunities; enhance their academic, technical/vocational, and work readiness skills; and create clear pathways from school to good jobs. Because of the systemic nature of the changes needed to produce these opportunities on a large scale, policymakers are looking to state governments as central agents for needed reform. The DOL and CCSSO programs supported the exploration of strategies for the development of state-based systems that could achieve the needed changes.

To assess the grantees' success, DOL and CCSSO arranged for a joint evaluation of the two programs. Conducted by Policy Studies Associates, Inc., and Workforce Policy Associates, the evaluation was intended both to report on the operations and effects of the DOL and CCSSO demonstration programs and to speak more generally to the question of how states might stimulate the development of powerful systems for the provision of school-to-work transition opportunities.

This executive summary presents an overview of the state initiatives

and discusses the organizational challenges, funding constraints, and time pressures that the eight states faced as they sought to implement their school-to-work initiatives. The summary highlights the study's findings in five key areas: (1) the program elements that can contribute to state-based school-to-work transition systems; (2) state-level governance mechanisms that can facilitate working relationships among secondary and postsecondary education agencies, state labor and employment agencies, registered apprenticeship, employers, and labor organizations; (3) state actions that can promote systemic change in local schools and school districts, including the development of needed curricula, assessment tools, and standards; (4) state actions that can facilitate employer involvement in system development and the provision of work-based learning opportunities; and (5) the contribution of national demonstration grants to the development of state systems.

OVERVIEW OF STATE GRANT ACTIVITIES

The DOL program, known as "Federal/State Partnerships for Youth Apprenticeship," awarded grants of \$200,000 each to six states in June 1992. This program was part of a larger effort to test new school-to-work initiatives that included, in addition to state grants, demonstration grants to selected local communities and the provision of technical assistance to states and communities.

The CCSSO program, known as "New Career Paths Through Youth Apprenticeship," awarded grants of \$50,000 to five states (although one state received a smaller amount for a shorter period). The Pew Charitable Trusts and the Charles Stewart Mott Foundation funded the grants, which

TABLE 1
KEY GRANTS RECEIVED BY THE EIGHT SAMPLE STATES

State	DOL Demonstration Grant \$	CCSSO Demonstration Grant \$	CCSSO Planning Grant \$
California	200,000	50,000	20,000
Iowa	200,000	—	20,000
Maine	200,000	50,000	—
Michigan	200,000	—	20,000
Oregon	200,000	—	—
Pennsylvania*	—	25,000	20,000
West Virginia	—	50,000	20,000
Wisconsin	200,000	50,000	20,000

Note: DOL=U.S. Department of Labor; CCSSO=Council of Chief State School Officers

*Although Pennsylvania did not receive a DOL state demonstration grant, it received a total of \$746,250 under a related DOL grant program to support the development of Pennsylvania Youth Apprenticeship Program demonstration sites. Pennsylvania's CCSSO grant was half the size of the other CCSSO grants because it was not awarded until halfway through the grant period. The state, which had ranked sixth in the CCSSO demonstration grant competition, was awarded its grant when another grantee withdrew from the CCSSO program.

were awarded in April 1992. In addition, DOL awarded a grant to CCSSO to defray the cost of technical assistance and evaluation. The CCSSO grants were preceded by the award of 10 planning grants for \$20,000 each. CCSSO opened the competition for the demonstration grants to all states, whether or not they had received a planning grant.

Because both the DOL and CCSSO grant programs sought to support promising state efforts, it is not surprising that the two programs selected some of the same states to receive grant awards. Table 1 shows the eight states and their grants.

Based on site visits, interviews, and the review of state plans and reports, it is clear that all eight states saw the development of school-to-work transition systems as responding to two overarching policy goals:

- Development of a highly skilled work force that would contribute to improved levels of economic investment and growth within the state
- Achievement of superior educational performance by all students, including those not headed for four-year college degrees

States varied in the degree of emphasis they placed on each goal; indeed, within several states, powerful interests continue to differ over whether economic or educational priorities should dominate.

Responding to the goals, each state developed a vision of the education and training configuration that could meet its needs. Some states crystallized this vision into a defined model to be implemented statewide. Other states adopted only a rough outline of desired activities, encouraging local discretion within broad, state-defined parameters.

All grantee states identified a few service components that they saw as essential for success, including work experience, guided work-site instruction, integrated academic and vocational learning, articulation between secondary and postsecondary instruction, career counseling, and a requirement to participate for at least two years. Table 2 summarizes several key features of the state plans; however, the states have not yet fully implemented all these features.

Although the sample states target these opportunities primarily to students not headed for four-year college degrees, students who successfully complete the planned programs can earn educational credentials beyond a high school diploma, as shown in Table 3. In most states, they can also use the youth apprenticeship experience as a stepping stone for entry into registered apprenticeship and enrollment in a technical or community college.

TABLE 2
SERVICE COMPONENTS
(AS OF JUNE 1993)

State	Work Experience and Work-Site Instruction	Integrated Academic and Vocational Learning	Career-Counseling Activities	Link between Secondary and Postsecondary Education	Program Duration and Sequence
California	Typically, unpaid internships during the 11th and 12th grade school year, paid structured work experience during the summer between the 11th and 12th grade, and part-time work during 12th grade.	Plans include work-site instruction that is supervised, organized, and sequenced in conjunction with classroom learning.	Not specified.	Planned articulation between high school and postsecondary institutions, including community and 4-year colleges.	"2 + 1" structure. At least 3 years, including at least 1 year of postsecondary education.
Iowa	Intensive work-site training planned.	Local site responsibility.	Provision of career development activities prior to grade 11. Formal career and occupational counseling for participants.	Planned articulation between high school and postsecondary learning.	At least 2 years starting in 11th grade.
Maine	Participants work at the job site for 30 weeks per year in 11th and 12th grade, and 34 weeks in grade 13. Work-site "masters" serve as mentors, trainers, and supervisors. Year-round stipend with annual increases.	State plans to assist schools in integrating workplace learning into academic curriculum.	Career exploration beginning in the 9th and 10th grades.	Participants take courses at 1 of 6 local technical colleges for 16 weeks during the year following 12th grade.	"2 + 1" structure. 3 years beginning in the 11th grade. 11th and 12th graders take 20 weeks of regular high school classes and spend 30 weeks on the job, working 4 days per week and learning a tailored curriculum on the 5th day. During 13th grade, participants spend 16 weeks at a technical college and 34 weeks working for an employer.
Michigan	Paid work experience as required.	Local site responsibility.	Required.	Articulation agreements with postsecondary institutions are required.	At discretion of local sites, based on state options.
Oregon	Based on the registered apprenticeship model, involving rotation through varied assignments at the work site, supervision by a trained mentor, and gradual increase in job responsibilities.	Developing plans to tailor classroom-based learning to fit youth apprentices' job placement.	Participants are required to complete an 18-week career preparation course before work-based training begins. Counseling is provided, with details determined locally.	Youth apprentices take related training courses with adult apprentices at community colleges or union training centers, in addition to high school coursework.	11th and 12th grades.
Pennsylvania	Participants spend 2 days each week on the job beginning in 11th grade and 3 days per week in 12th grade. Participants receive wages that gradually increase during participation. Work-site mentor monitors youth apprentice's progress, acts as a resource to the youth apprentice in his or her working life, and provides youth apprentice with feedback.	A team of academic and vocational teachers integrates academic, technical, and occupational education based on the needs of industry.	Career counseling activities beginning in middle school through service learning and career education.	In planning stage. Possibility of a new Associate's Degree in Specialized Technology.	3 to 4 years, depending on attainment of competencies and particular industry; at least 1 year of postsecondary education.
West Virginia	Participants engage in paid work during the 12th grade under the supervision of skilled craftspersons/mentors who serve as work-site supervisors, evaluators, and coordinators.	Tech Prep curriculum will be used.	Career-counseling and information centers, modeled after German service centers, will provide comprehensive career information.	Youth apprentices have the option of earning a Tech Prep Associate Degree at a community college.	11th and 12th graders can enter registered youth apprenticeship and subsequently continue to community college to receive a Tech Prep Associate Degree or enter the adult registered apprenticeship program.
Wisconsin	Participants work at least 3 school semesters with optional summer job, wage increases based on attainment of workplace competencies. Mentors provide on-the-job training in skilled occupational areas. Youth apprentices follow a systematic schedule of identified work activities and are rotated through major occupational areas.	Developed by local sites, based on state guidance, with industry driven work-based curriculum certified by the state.	Career-counseling and information centers, modeled after German service centers, will provide comprehensive career information as part of K-12 guidance system.	Participants receive advanced standing or credit at a technical college, and keep option for application to state's university system.	11th and 12th grades.

TABLE 3
TARGETED PARTICIPANTS, CREDENTIALS, AND OTHER OUTCOMES
(AS OF JUNE 1993)

State	Targeted Participants	Credential at Completion	Other Possible Outcomes
California	No state-suggested eligibility requirements, but participating career academies focus on at-risk youth.	Certification of youth apprentice in a specific industry.	Further education.
Iowa	Non-college-bound students who are not at risk.	Recognized credentials of both academic and occupational skill mastery.	Further education at a community college.
Maine	High school students who will not attend a 4-year college.	1-year technical college certificate and a Certificate of Mastery.	Continued education at a technical college to receive Associate's Degree.
Michigan	Mainly non-college-bound students.	Certificate, high school diploma.	Admission to a registered apprenticeship program; specialized occupational training.
Oregon	Students who are enrolled in a vocational education course in high school.	High school diploma.	Credit toward on-the-job training requirement for registered apprenticeship.
Pennsylvania	Both non-college-bound students and those considering postsecondary education.	Credentials for academic and occupational skill mastery.	3 options: go directly to work, complete a traditional registered apprenticeship program, or continue college. Up to 2 years of postsecondary credits transferable to a 2- or 4-year college in Pennsylvania.
West Virginia	Students who are enrolled in a vocational education course in high school.	Tech Prep Associate Degree.	Guaranteed placement in a registered apprenticeship program that leads to employment as a journeyperson or 3 other options: full-time work, completion of a Tech Prep Associate Degree, or enrollment in a B.A./B.S. program.
Wisconsin	All students, especially those in the middle 2 quartiles.	State Certificate of Occupational Proficiency, based on industry skill standards.	Option of entering a postsecondary institution seeking a registered apprenticeship, or obtaining a job.

A few states also envision that students will be qualified to enroll in a baccalaureate program after they complete the youth apprenticeship program. The latter outcome presents program design challenges, however, because of the reluctance of many four-year colleges to accept secondary-school credits earned in courses that stress hands-on, applied learning.

To create statewide systems capable of implementing these plans, participating states found it essential to involve many agencies of state and local government, as well as the private sector. Key state-level agencies and departments include education (postsecondary education, as well as elementary and secondary), labor/employment (including registered apprenticeship), economic development, and the governor's office. Locally, key public sector players include secondary schools, community colleges, regional vocational education centers, and Private Industry Councils. The business community and, to a lesser extent, organized labor are central private-sector players at both local and state levels. Indeed, the commitment and capacity of employers to participate through the provision of workplace training positions are critical factors in determining the pace of statewide adoption of school-to-work training opportunities, such as

TABLE 4
STATE ADMINISTRATIVE BODIES AND LEGISLATION
(AS OF JUNE 1993)

State	Lead Planning/ Implementation Body	Preexisting Legislation	Recent Legislation	Pending Legislation
California	Youth Apprenticeship Steering Committee oversees planning, development, and implementation. Administrative responsibilities split between California Department of Education and the Economic Development Department.	None.	None.	SB 781, placeholder legislation that would create a Workforce Preparation Council to ensure the implementation of school-to-work programs—called CA Career Pathways Programs—created by the bill.
Iowa	Work Start State Agency Steering Committee consisting of representatives of the Depts. of Economic Development, Employment Services, and Education and the Office of the Governor. Responsible for coordinating the development of the Work Start program.	Work Start legislation was enacted in 1992. Vocational education legislation (SF 449) in 1991 created minimum school-level standards and requirements for vocational education.	None.	Bill to create overarching school-to-work programs introduced.
Maine	Center for Youth Apprenticeship, a 501(c)(3) organization, guides statewide implementation, coordinates youth apprenticeship among 6 regional campuses of the state technical college system, and provides technical assistance to participating schools.	None.	Legislature established the Center for Youth Apprenticeship in May 1992, shortly after receiving the CCSSO and DOL grants.	None.
Michigan	Governor's Workforce Commission oversees administrative activities, including grantee selection, and coordinates work-force development programs.	None.	None.	HB 4505 would create a statewide cabinet for professional and technical standards.
Oregon	Bureau of Labor and Industries and Department of Education promote and develop youth apprenticeship through regional apprenticeship consultants.	Law enacted in 1990-91 created program based on registered apprenticeship model and established youth apprenticeship wage.	SB 81 expands school-to-work opportunities beyond youth apprenticeship and provides work-based programs within a broader context of education reform. ¹⁸	None.
Pennsylvania	The Office of the Secretary, within the Department of Education, a partnership that includes the Departments of Commerce and Labor and Industry.	None.	None.	Bill in legislature that would formalize the existing youth apprenticeship program.
West Virginia	State director from U.S. DOL/Bureau of Apprenticeship Training (USDOL/BAT) and West Virginia Dept. of Education (WVDOE) jointly administer program. WVDOE • assists with curriculum • makes available networks of technical and adult learning centers to support apprenticeship programs • coordinates related services USDOL/BAT • provides technical assistance • shares information about labor market trends • establishes employer guidelines • refers employers	Mandated the development of academic and vocational competencies and proficiency exams.	None.	Bill in legislature to determine future governance of youth apprenticeship.
Wisconsin	Governor's Office for Workforce Excellence of the Dept. of Industry, Labor, and Human Relations administers programs with the involvement of the Department of Public Instruction and the State Board of Vocational, Technical, and Adult Education.	Act 39/School-to-Work Transition Initiative established statewide youth apprenticeship program, gateway exam for 10th graders, Tech Prep curricula at each high school, and Youth Apprenticeship Advisory Council.	1993 bill transferred youth apprenticeship responsibilities to the Governor's Office of Workforce Excellence and established youth apprenticeship as one of several career pathways.	Proposed legislation would provide grants to employers to offset supervision and training costs.

Note: DOL=U.S. Department of Labor; CCSSO=Council of Chief State School Officers.

¹⁸The enactment of SB 81 in August 1993 is the only state activity reported here that occurred after June 1993. It is noted because it represented a fundamental shift in Oregon's policy regarding youth apprenticeship and school-to-work transition.

youth apprenticeships, which emphasize work-force learning.

The eight states use various structures for system development and operation, as seen in Table 4. In some instances, these structures evolved to bring key parties to the table or respond to direction from the governor or legislature. Because of the necessity of balancing multiple interests, state-level organizing structures employ mechanisms such as interagency agreements, steering committees with representatives from many agencies and sectors, and executive cabinets.

About half the sample states have adopted legislation that is helping to shape school-to-work transition opportunities, as Table 4 indicates. These laws contribute to program development by (1) defining funding sources, (2) setting parameters for program quality and accountability, (3) establishing an organizational home for the initiative, and (4) creating advisory bodies to facilitate cooperation among key public- and private-sector stakeholders. Based on the experience of several states with actively developing systems and no corresponding state law, however, it appears that state authorizing legislation is not essential, at least in the early stages of development and operation.

Employing these state-level organizations, the participating state governments used their demonstration grants to conduct three types of activities:

- Further development of state-level infrastructure for support of school-to-work transition opportunities
- Award of pilot grants to local sites
- Design and delivery of various types of program support services, including technical assistance, training, and evaluation

Table 5 summarizes the implementation status of local project sites in the eight states, as of June 1993. As the data indicate, levels of local implementation vary significantly. One major factor accounting for the differences is simply whether the state chose to press for rapid local implementation or to focus early efforts on building infrastructure and support capacity. Another important factor was the extent of local and state implementation preceding the grant award. Other key factors explaining state differences are:

- The capacity and willingness of education agencies to support applied, hands-on learning and enter into active partnerships with employers
- Public understanding of nontraditional school-to-work strategies, including youth apprenticeship

- The level of leadership within the business community in promoting employers' acceptance of new strategies for work-force development
- The capacity of employers to provide training opportunities to youth, which depends to some extent on whether their overall employment needs are growing or shrinking
- The importance of registered apprenticeship in shaping the state's work-force-development strategies
- The availability of earmarked public funds to support local programs

Each state confronted the issue of creating and implementing a new vision of school-to-work transition in the context of a public education system that is itself undergoing rapid change. These education-related shifts are generally consistent with the ideas and assumptions underlying current notions of effective support for school-to-work transition (e.g., higher standards for student performance, better links between curriculum and assessment, more emphasis on higher-order thinking and problem solving, and stronger connections between secondary and postsecondary schooling). Even so, the pace and extent of change in the core elementary/secondary system are competing for scarce resources in some places with school-to-work reform.

The experience of the eight grantees under the DOL and CCSSO

TABLE 5
LOCAL OPERATIONS
(AS OF JUNE 1993)

State	Operating Sites	Sites in Planning	Number of Participants	Number of Employers	Key Industries
California	6*	7	150**	Numerous	Printing, health, and building construction.
Iowa	0	8	0	0	Health, finance, insurance, and construction.
Maine	1	4	15	8	Manufacturing technology, health, metalworking, and insurance.
Michigan	6*	10	250-300***	Numerous	Wide range, including machine tools, health, theater technology, baking, sales and marketing, and automated assembly systems.
Oregon	6	50	9	9	Health and traditional apprenticeship trades (including sheetmetal and welding).
Pennsylvania	6*	10	100	79	Metalworking and health care.
West Virginia	7	17	41	35	Wide range.
Wisconsin	2	5****	120	Numerous	Printing.

* Includes some sites established prior to CCSSO and DOL grants.
 ** This figure does not include participants at Los Angeles site, because that number was not available.
 *** Most students at preexisting sites, such as Flint and Kalamazoo.
 **** Wisconsin is starting 8 new programs at existing and new locations.

demonstration programs indicates certain additional problems impeding state-level capacity for system reform. Although none of these is a fatal defect, the problems will require attention to achieve the intended levels of system development.

PROBLEMS IN DEVELOPING STATE CAPACITY FOR SYSTEMIC REFORM

On the basis of their early efforts, it appears that states may be hampered in their efforts to promote reform by several factors, including organizational challenges, funding constraints, and time pressures.

ORGANIZATIONAL CHALLENGES

Despite national and state intentions and rhetoric, only a few leaders in each of the eight states have clearly and publicly articulated a commitment to systemic change in policies and practices supporting school-to-work transition. This type of commitment is essential to move from the current fragmented array of programs and services to the creation of a comprehensive system supporting successful school-to-work transition. As this evaluation and other research have shown, American educators, employers, and government policymakers exhibit a strong inclination to think in terms of programs. This will change only as those involved experience more opportunities to consider possible implementation strategies and the results that might potentially flow from systemic reform.

Although the eight states have adopted blueprints for new systems, it does not appear that these designs are widely understood at state or local levels. Nor does it appear that the vision set forth in these designs has been widely considered or accepted. This is particularly obvious with respect to system goals and expected outcomes for students. Without a clear vision, accepted by large numbers of voters and stakeholders, it is unlikely that pilot programs can grow much beyond a small number of students, schools, and industries.

To complicate this challenge, where initiatives are perceived as governor driven, they acquire an immediate visibility; but they may become just another program when the governorship changes hands. Because there have been no turnovers among governors in any of the demonstration states to date, it is difficult to predict what effect such changes will have on state initiatives. In several states, however, changes in key state-government personnel have delayed implementation. Where initiatives have been pursued informally (e.g., through committees) rather than through directions from governors or legislatures, such groups may prove effective in bringing together disparate interests, but they may be unable to penetrate individual bureaucracies or command the political clout

needed to fund and institutionalize them over time.

In theory, state-sponsored school-to-work activities are well suited to serve as a bridge between strategies for educational improvement and economic development. Because state government generally plays only a limited role in these two arenas, however, it is difficult for states to forge a clear role at the center of a complex relationship involving business, education, and employment training. In most places, the state's role in education is stronger and clearer than it is in either business (where the state role has historically been confined largely to regulation) or employment training (where the states typically play neither a leadership role nor act as a force in determining labor market demand). Even in education, the state role is overshadowed by the decision-making and operational responsibilities of local school districts. Hence, in each of these areas, state influence must be derived from the state government's marketing, technical assistance, and grant-making capabilities and from its ability to develop state-level organizational mechanisms that can move state policies and bureaucracies in complementary directions. This is a tall order, given the short time frames within which most elected officials operate, the condition of state budgets, and competing special interests.

Consensus building and system implementation in the eight grantee states are also impeded by the governance mechanisms most of the states have adopted. In some states, these mechanisms have proved effective in creating a forum for dialogue among individual state agencies and among the public and private sectors. However, most have little real clout over state bureaucracies, funding, or policies. Although there are a few instances where statewide changes have been made as a result of discussions held in these forums, to date they have mainly served as vehicles for airing problems and initiating pilot programs, rather than as governing bodies. Alternatively, when the initiative is housed in a particular agency, people often view the program as belonging to that agency; and it is hard to persuade more than a handful of staff in other agencies to work cooperatively for its success.

FUNDING CONSTRAINTS

State-level fiscal limitations raise serious questions about the capacity of states and localities to support new school-to-work systems without new revenue streams. Seed money from DOL, CCSSO, and other sources has been critically important to states in launching the initiatives described in this report. The eight states, moreover, have used their grants to leverage other resources at state and local levels. These funds, however, have been mainly "soft" money from sources outside state and local tax revenues. In a few instances, state agencies have been able to convince

their legislatures to invest state resources in developmental efforts. At the same time, however, the competition for state resources has become fiercer than ever. In addition to pressures to reform the base program of K-12 schooling, some legislatures and courts are also requiring states to redesign their systems for allocating state aid to local districts.

Similar pressures exist at local levels. Where localities receive state funds based on attendance or enrollment, they may be unwilling to share students—and hence dollars—with regional vocational schools or community colleges. They may also be reluctant to spend funds on activities they view as being relatively expensive, such as work-based learning.

The types of capacity-building needed to develop and implement new systems of school-to-work transition are costly, especially in terms of professional time. Rechanneling existing resources may not be sufficient to generate the funds required for systemic change.

LIMITS ON AVAILABLE TIME

All eight of the grantee states have found that implementing a major school-to-work initiative is taking more time and is more complex than any of the stakeholders anticipated. Designing and implementing high-quality learning opportunities at the local level are equally challenging. Given the disparate parties and interests involved, it is difficult even to launch pilots involving a few students each. To implement new systems or change old ones takes time. The complexity of designing lasting governance arrangements, developing widespread consensus for change, and engaging employers on a large scale in providing work-site learning experiences creates serious demands on the time of those involved. Pressures to set performance standards and measure results are strong. At the same time, however, the term of office of most elected local, state, and national officials is relatively short, and the political life of most national issues rarely exceeds two years or so. It is unlikely that school-to-work transition systems can become widely established within such limited time frames. Federal legislation would add a degree of stability to this process; but state leaders agree that it will take concerted national, state, and local effort and perseverance to accomplish significant reform.

These challenges, though important, do not foreclose the possibility of meaningful change. As discussed in the next section, the findings of the current evaluation highlight several planning and implementation lessons that state and local system developers can use to create a solid foundation for their efforts.

LESSONS FOR CURRENT PROGRAMMING

Identifying lessons from the eight states is made especially important by current efforts to establish a national framework for the development of state-sponsored systems to facilitate the school-to-work transition of American youth. The framework under current consideration calls for states to develop plans that will:

- Include marketing strategies to build consensus and support for state action
- Establish necessary administrative structures
- Create broad-based partnerships involving employers, educators, organized labor, and others
- Integrate school-to-work initiatives with education reform
- Promote the active involvement of business

While engaged in planning, states would also support local site development, develop procedures for issuing skill certificates, design challenging curricula, and generate labor market information. States that receive implementation grants under the federal initiative could use these funds to recruit and assist employers, promote collaboration among key stakeholders, provide training for school and workplace personnel, furnish labor market information, and develop curricula. These states would also design and implement equity plans, assessment strategies, participant performance standards, plans for coordinating with other education and training programs, and approaches for continuing these activities when federal funds are no longer available.

Lessons learned from the DOL and CCSSO programs address five priorities.

INCLUSION OF KEY ELEMENTS IN STATE-BASED SCHOOL-TO-WORK TRANSITION SYSTEMS

State policies and strategies in support of effective school-to-work transition systems need to incorporate several central elements, including work-based learning; integration of academic and employment-related instruction; career exploration; and collaboration among secondary schools, employers, and postsecondary institutions. Together, these elements can enrich the quality and relevance of the educational experiences available to all American youth. Appropriate configurations of learning opportunities vary, however, according to individual students' interests, maturity, and skills. Accordingly, a statewide system for school-to-work transition will meet the needs of the largest number of participants if it offers varied opportunities that embody the elements listed here. Many

opportunities currently being implemented can contribute to such a system. These include youth apprenticeship, Tech Prep, service learning, career academies, restructured vocational education, and cooperative education, among others. Although some states are moving toward the development of broad frameworks encompassing many types of opportunities, none of the states examined in this study has both articulated such a design and generated public understanding and support for it.

The development of new school-to-work opportunities can have the greatest impact if it is integrated into broader education reform. Some of the states examined here are developing school-to-work transition opportunities within the context of state education reform, but practical links joining the instructional and structural reform of academic schooling and school-to-work transition tend to be weak at present. Where real integration is occurring, it is marked by an emphasis on the development and use of learning standards, assessment tools that measure the learner's skill in applying knowledge in new contexts, and new instructional techniques (especially applied learning and learning for understanding), along with staff development and school reorganization to support these priorities. Seeing school-to-work instruction as a learning strategy that advances broader reform objectives can create benefits for both school-to-work transition and the broader education reform process.

Restructured vocational education can be an important part of a school-to-work system. The most recent amendments to the Perkins Act sought to generate comprehensive reforms of vocational education through (1) the integration of vocational education with academic instruction, (2) opportunities for students to learn about all aspects of an industry, and (3) the development and use of performance standards. In many places, youth apprenticeship and other work-based training opportunities are accelerating the adoption of these priorities in vocational education programs and are helping to open vocational education to new levels of employer involvement. However, rivalry and competition exist between the new initiatives and traditional vocational education in those state agencies and local schools where vocational educators see the new approaches as challenging their existing curricular sequences, employer relations, and student-supervision arrangements.

Although Tech Prep shares many important features with youth apprenticeship, including key assumptions about underlying strategies for effective preparation of the work force, coordination between the two programs is essential. Expansion of Tech Prep and development of youth apprenticeship are proceeding on parallel and sometimes competitive tracks in the eight grantee states. Although some states envision Tech Prep and youth apprenticeship as complementary career pathways for youth,

that vision is rarely translated into effective coordination at either the state or local level. The main barriers to coordination are time, turf, control of funding, and the varying pace at which each program is unfolding nationally and locally. A special problem is that many educators responsible for Tech Prep are inexperienced in the types of energetic outreach to employers that are needed in building successful work-based programs. In addition, in some states Tech Prep is primarily focused on developing articulation agreements between secondary and postsecondary institutions; and few changes are being made in the content and strategies of the learning experience itself. A problem that youth apprenticeship and Tech Prep share in many places is that four-year colleges resist accepting course credits earned in instructional programs that involve skill learning in the workplace.

Registered apprenticeship offers a career path for students participating in school-to-work initiatives, and models exist for successful accommodation between these forms of work-based learning. At the state level, turf problems sometimes overwhelm efforts to achieve coordination between youth apprenticeship and the registered program, although the two are effectively coordinated in some places. A central impediment has been the use of the term *apprenticeship*. Where coordination is successful, people generally see post-high school entry into registered apprenticeship as one option among an array of career pathways. In addition, a few states and local sites have strengthened linkages by drawing on their experiences with registered apprenticeship to develop instructional materials for school-aged youth and launch new work-based learning initiatives.

In setting goals for school-to-work transition systems, states need to recognize the desires of parents, teachers, and students to maintain college-enrollment options for young people. Goals that states select for school-to-work systems affect decisions of parents, students, employers, and educators about whether they should participate. Most of the states reviewed in this study have determined that school-to-work transition systems at the secondary school level should at a minimum prepare students for entry into good jobs, registered apprenticeship, and two-year technical college training. Some stakeholders also want students to be able to enter a four-year college after they complete a school-to-work program. The lack of consensus over college enrollment as a post-program option has created tensions and resistance at some local sites, however, and may prove more troublesome as initiatives try to expand to more sites and students.

MECHANISMS FOR EFFECTIVE GOVERNANCE

Effective state governance requires structures that can forge working relationships among key public stakeholders and secure the implementation of necessary actions and policies by state and local agencies.

Three features seem to characterize effective structures for state governance. They are:

- A capability to bring together all the parties whose involvement would contribute to implementation success, which requires the organizing structure to be seen as committed to treating competing interests fairly
- The ability to develop consensus for action among essential state agencies and the leverage to develop the tools, technical assistance, labor market and career information, staff training, legal review, monitoring, grant-making, and other activities necessary to mount an effective school-to-work transition system throughout the state
- Sufficient prominence to command attention and resources when needed from the governor and legislature

The states reviewed in this study have experimented with a variety of governance and administrative arrangements. Whereas administrative functions are usually housed in an existing agency, the eight states have used interagency agreements, internal steering committees, executive cabinets, consultants, and other arrangements to administer day-to-day operations and resolve the complex array of cross-agency issues that arise. States appear to have been most successful, through the use of advisory committees, in bringing together diverse interests to set criteria for launching local pilots and resolve problems that arise in that process. None of the eight states has yet developed a governance mechanism with authority to affect decision making in participating agencies or across program lines, although several states are adjusting their original governance arrangements to address these objectives.

STATE ACTIONS TO PROMOTE LOCAL CHANGE

State efforts can enhance the development of local school-to-work systems through provision of start-up grants, development of curricula and assessment tools, support for staff development, improvement in guidance and counseling systems, and rationalization of policies spanning secondary and postsecondary schooling. Some states have focused their efforts on starting local pilots; others have concentrated on developing administrative and support capacities to promote systemic reform. In building administrative and support capacities, local sites value hands-on

technical assistance, activities to promote networking across sites, help in troubleshooting problems with state agencies, and the development of curriculum and other tools, even though they also want to be able to customize program design elements. Local sites understandably want both start-up grants and support services; few of the sample states, however, have had the resources to pursue a comprehensive strategy.

The preexisting characteristics of the state-local relationship strongly affect local receptivity to efforts by the state to promote school-to-work transition systems. Observers of the states' role in encouraging the local adoption of education-related change have generally concluded that local responses are strongly affected by preexisting state-local relationships. This conclusion is valid in the case of school-to-work transition opportunities, with the added complexity that several state agencies are typically involved in school-to-work transition. These relationships thus involve a large number of parties and hence either a large number of preexisting relationships or a need to build relationships where none has previously existed. Experience in the demonstration states suggests that local adoption can be facilitated by systematic efforts at the state level to cement better working relationships across agencies and among sectors, followed by communication of these relationships to local entities.

State support for curriculum development can contribute to successful local implementation of school-to-work opportunities. In many instances, pressures to quickly plan and implement pilot sites have strained the capacity of programs to approach curriculum development deliberately and thoughtfully, and most current efforts in the eight states of this study are fragmented. State support for creating integrated curriculum frameworks that could guide local curriculum development and implementation would help ensure continuity and quality in instructional approach across the state. To this end, states can support release time for teachers to develop curriculum and work with teachers in other sites. Although some states are developing skill standards, state leaders stress the need for federal assistance in this area.

States can help facilitate effective linkage between secondary and postsecondary institutions. The ease with which a secondary school can develop an articulation agreement with the community or technical college system seems to be related to the comprehensiveness of the state education governance system and state-level support for coordination. Where levels of education are governed by differing state agencies and there is little state support for coordination, secondary schools face a difficult challenge. The relationship with four-year institutions is even more difficult because most colleges and universities will not accept applied academic courses on student transcripts as substitutes for college-prep academics.

More intensive efforts are needed to expand the participation of at-risk youth and young women. Students participating in the state pilots reviewed in this study are generally the cream of the crop among those students not headed for four-year college degrees, according to program administrators. Because of the necessary investment in time and wages, employers want motivated, educated young people who will fit smoothly into the work environment and whose presence will not challenge accepted ways of doing business. Because work-based learning must have strong employer support to develop, program administrators have usually selected for participation only those students who they believe are most likely to succeed in the workplace. Expanding the participation of at-risk youth and young women may require state policies encouraging (1) earlier intervention to introduce all students to potential careers and prepare them for the varied demands of the workplace and (2) more supports for student learners on the job. Both of these techniques, along with efforts to prepare instructors, employers, and workers for receiving at-risk youth and young women, are important strategies for increasing their participation in varied occupational programs. Although states are aware of these issues, only a few of those in this study have taken actions to incorporate these techniques.

STATE ACTIONS TO FACILITATE EMPLOYER INVOLVEMENT

States can play a central role in encouraging employers and employer associations to participate in school-to-work initiatives.

Governors and senior officials in a number of states have personally recruited employers and employer associations to become involved in the design and operation of work-based learning initiatives at state and local levels. At the state level, employers are typically asked to serve on advisory committees and to provide advice in such areas as program design; the development of standards, credentials, and curriculum; and projections of needs for entry-level, career-ladder jobs within their industries. At the local level, employers are asked to provide structured work-site learning experiences and to select experienced workers to serve as mentors, trainers, and supervisors. They are also often encouraged to serve on steering committees, participate in program design and curriculum development, and recruit other employers. Some states have proposed financial incentives to encourage employer participation in these activities; tax credits or reimbursements to offset some training and supervisory costs are among the strategies most often considered.

Intermediary organizations and other administrative techniques can facilitate involvement of employers in school-to-work transition opportunities. Several states in the eight-state sample are using organiza-

tional strategies to increase employer involvement. These strategies respond to an important feature of work-based learning that is especially difficult for educators to implement—outreach to and collaboration with employers. Some states facilitate the school/employer relationship through intermediary organizations that are committed to the economic development of business and industry and are staffed and equipped to recruit new employers and troubleshoot problems that arise in employers' relationships with schools. Such organizations can include new entities created for this purpose and existing organizations, such as trade associations and regional business/industry groups. Some states are also using techniques such as (1) encouraging the designation of program coordinators to facilitate relationships among schools, employers, student learners, and parents; and (2) creating a statewide nonprofit organization to which all participating employers make contributions for payroll, taxes, and insurance premiums, hence relieving employers of this burden.

Although preexisting legal requirements can create barriers to students in the workplace, these problems are resolvable. In some states, concerns about legal issues (e.g., workers' compensation provisions, child labor laws, and immigration restrictions) have reportedly deterred the involvement of employers in work-based learning opportunities. Several states have developed models for resolving these concerns, including the dissemination of employer-oriented guidance materials, personalized technical assistance, and the use of intermediary organizations that take over responsibility for ensuring compliance.

DEMONSTRATION PROGRAMS AS A SUPPORT TO SYSTEM DEVELOPMENT

Demonstration programs, such as those sponsored by DOL and CCSSO, can spark varied activities directed toward building statewide systems for the provision of school-to-work opportunities; they are most effective when they involve technical assistance, oversight, and efforts to promote learning among states and localities. These experiences can inform others who are planning such efforts or who are merely considering possibilities. To be useful, however, information and materials from the demonstration sites need to be analyzed and disseminated. Through monitoring and evaluation, states need to be held accountable for the activities funded by national grants. Publication of evaluations is a useful communication strategy. Other strategies include (1) national and regional forums in which state and local administrators can share their experiences with each other and with administrators who are beginning to plan; (2) technical assistance from experts and peers; and (3) the establishment of learning networks linking administrators, local site personnel, and others involved in the development of these opportunities.

Widespread interest in the transition of American youth from schooling to employment is one of the most important recent developments in the continuing debate around two issues that are central to the nation's economic and social health: (1) upgrading the quality of the American work force and (2) improving the relevance and quality of American education and training systems. Recent experience with initiatives to improve school-to-work transition indicates the importance of developing a range of opportunities linking schooling to employment, to accommodate the variety of personal circumstances among youth who are looking toward careers. This study examined state efforts to develop systems promoting youth apprenticeship, which is one important strategy for facilitating school-to-work transition. Although focusing on this strategy, the study considered youth apprenticeship in the context of multiple school-to-work pathways that emphasize student learning in real job sites.

Based loosely on the European model of apprenticeship, as well as American history with registered apprenticeship, youth apprenticeship has evolved differently in every state and community in which it has been undertaken. The central elements envisioned in virtually all sites where youth apprenticeship is being planned or implemented, however, are as follows:

- The provision of guided, workplace-based training in real job sites, where students work as paid employees, guided by experienced mentors
- A planned sequence of learning opportunities extending over two or more years
- The integration of experiences from the workplace into school-based instruction
- Collaboration among secondary schools, employers, and postsecondary institutions in decisions about what students will learn and how they will learn it
- Continuing assessment of both students and programs to ensure that education and training opportunities and participant performance meet high standards of relevance and quality

These features differentiate youth apprenticeship and

related school-to-work pathways from conventional schooling and vocational training. Because these differences seem to point to the greater potential quality and relevance of the newer pathways, researchers and practitioners in many settings are currently examining local experiences in implementing them. These inquiries should help determine the relevance and effectiveness of these school-to-work transition strategies in the American context.

Current experimentation and research efforts are important because of the promise that youth apprenticeship and related pathways hold for improving the educational and employment prospects of America's youth and also because of the opportunities that they offer for developing the technological and problem-solving skills that America's employers will need from the work force of the 21st century. In particular, from the point of view of the student-participant, guided workplace experience provides an opportunity to obtain firsthand information and skills in a given career area, thus possibly shortening the period between the youth's completion of schooling and his or her entry into career-track employment. From the point of view of the school, opportunities for guided workplace experience can bring teachers and administrators, as well as students and parents, into closer contact with employers, thus providing educators with information and contacts to make schooling more relevant to real life. From the perspective of the employer, these approaches can facilitate their access to schools, thus allowing employers to influence and support the educational experiences of their future work force.

Because of the scope and potential difficulty of some of the changes entailed in implementing youth apprenticeship and related pathways, analysts have looked to state government as a possible catalyst and organizer of new systems to promote these approaches. These approaches require cooperation and collaboration among powerful independent sectors, including employers (and their associations based on trade and region), the elementary and secondary education system, higher education (especially community and technical/vocational colleges), and organized labor. Although each sector has much to gain from collaboration to improve the work force preparation of youth, each also has something to lose, especially in terms of autonomy. In theory

at least, state government may have both the influence (especially through governors and other elected officials) and the administrative mechanisms to create and administer collaborative systems that can facilitate the development and adoption of new pathways on a large scale and also ensure adherence to high standards of service quality and consistency. Accordingly, the two national demonstration programs examined in this evaluation sought to determine whether state government could develop and implement statewide systems that are capable of promoting the local adoption of youth apprenticeship, among other related opportunities.

PURPOSES OF THE EVALUATION

This study reviewed the experiences of eight states in designing and implementing statewide systems of youth apprenticeship capable of facilitating school-to-work transition. Each state participating in the study is the recipient of a demonstration grant from either the U.S. Department of Labor (DOL) or the Council of Chief State School Officers (CCSSO) or both organizations. The study had three purposes:

- *The first purpose was to assess the feasibility of relying on state sponsorship to promote the development*

of collaborative systems of youth apprenticeship. The study addressed topics such as the capacity of the state governments in our sample to serve as both the engines for change and a central administrative unit in career pathways, including youth apprenticeship.

- *The second purpose was to explore problems and opportunities in the development of statewide youth apprenticeship systems.* In this connection, the study examined the relationship of school-to-work opportunities to state-led school reform efforts and existing registered apprenticeship programs. The evaluation also examined governance arrangements adopted by states and the various roles assigned to advisory bodies formed at state and local levels to support the implementation of career pathways.

- *The third purpose was to determine the effectiveness of the DOL and CCSSO demonstration programs in sparking the development of youth apprenticeship systems in the eight states.* The study considered states' plans for the use of their grants and the actual activities and services that the grants supported.

As these purposes indicate, the evaluation was intended both to report on the operations and effects of the DOL and CCSSO demonstration programs and to speak more generally to the policy question of how states might stimulate the development of powerful systems supporting school-to-work transition.

The term *youth apprenticeship* is used throughout this report to identify the opportunities that states sought to create for youth. Indeed, the DOL and CCSSO programs used this term. During the course of the evaluation, however, the public policy focus broadened somewhat and came to encompass a wider range of opportunities for youth. Sponsoring agencies increasingly perceived of youth apprenticeship as one promising option among an array of school-to-work transition strategies emphasizing educational linkages with real job sites. Over the course of their grant periods, each of the eight states has moved in the direction implied by the more inclusive terminology.

TABLE 1
KEY GRANTS RECEIVED
BY THE EIGHT SAMPLE STATES

State	DOL Demonstration Grant \$	CCSSO Demonstration Grant \$	CCSSO Planning Grant \$
California	200,000	50,000	20,000
Iowa	200,000	—	20,000
Maine	200,000	50,000	—
Michigan	200,000	—	20,000
Oregon	200,000	—	—
Pennsylvania*	—	25,000	20,000
West Virginia	—	50,000	20,000
Wisconsin	200,000	50,000	20,000

Note: DOL=U.S. Department of Labor, CCSSO=Council of Chief State School Officers.

*Although Pennsylvania did not receive a DOL state demonstration grant, it received a total of \$746,250 under a related DOL grant program to support the development of Pennsylvania Youth Apprenticeship Program demonstration sites. Pennsylvania's CCSSO grant was half the size of the other CCSSO grants because it was not awarded until halfway through the grant period. The state, which had ranked sixth in the CCSSO demonstration grant competition, was awarded its grant when another grantee withdrew from the CCSSO program.

DOL AND CCSSO PROGRAMS UNDER REVIEW

Among the eight states examined in the evaluation, six received state youth apprenticeship grants from DOL, and five received demonstration grants from the CCSSO. Six of the eight had earlier received CCSSO planning grants. Table 1 shows the eight states and their grants. Because the purposes and timing of the DOL and CCSSO programs were very similar, this evaluation examined activities under both grant programs.

DOL'S FEDERAL/STATE PARTNERSHIPS FOR YOUTH APPRENTICESHIP

In June 1992, DOL awarded grants to "form federal-state partnerships to support the development of statewide youth apprenticeship programs," according to a Statement of Work transmitted to the grantees. Each of the six states selected to receive the grants was awarded \$200,000 for a year's worth of activities to develop a state system of youth apprenticeship. Because the grants were awarded quickly and with little advance notice, the state recipients were not asked to develop work plans until after the grants had already been awarded. In addition to preparing plans for using the grant to develop and refine a state youth apprenticeship system, each grantee state was required to indicate the governor's commitment to developing and adopting a statewide system based on the youth apprenticeship model outlined by DOL. This model included components dealing with academic instruction, work-based learning, job experience, youth apprenticeship agreements, and information and guidance for the youth apprentice.

The federal/state partnerships program was part of a larger DOL effort to stimulate the development of youth apprenticeship. In addition to the state grants, DOL awarded two rounds of grants that are helping to support youth apprenticeship in a variety of local contexts, including sites in the eight demonstration states. DOL has contracted with Mathematica Policy Research, Inc., of Princeton, New Jersey, to evaluate the local grant program. In addition, DOL is supporting the provision of technical assistance in youth apprenticeship programming through support to Jobs for the Future, Inc. (JFF) of Cambridge, Massachusetts.

CCSSO'S NEW CAREER PATHS THROUGH YOUTH APPRENTICESHIP

CCSSO's support for youth apprenticeship grew out of the Council's policy statement on "connecting school and employment," adopted by the Council's membership in 1991. The statement endorsed the expansion of "successful methods of integrating academic and occupational education and work-based learning, such as high-quality cooperative education, youth apprenticeship, and service learning." It further said that "students in these programs should obtain a high school diploma, postsecondary credentials, and certification of occupational skills."

CCSSO awarded its implementation grants in April 1992 for a one-year period. The Pew Charitable Trusts and the Charles Stewart Mott Foundation provided financial support to CCSSO for both the planning grants and implementation grants. DOL awarded a grant to CCSSO to provide technical assistance to the program's grantees and to conduct this evaluation.

As a membership organization serving public officials who head state departments of education, it is understandable that CCSSO directed its program of support for youth apprenticeship to the state level. The CCSSO and DOL programs shared a focus on assisting state governments to develop statewide systems of youth apprenticeship. Four key differences, however, separate the CCSSO and DOL programs. First, CCSSO chose to fund a series of planning grants before funding the state implementation grants. Out of a concern that few states were in a position to begin implementing statewide programs, CCSSO first awarded planning grants of \$20,000 each to 10 states. These grants extended from late summer 1991 through February 1992. CCSSO did not limit its later competition for implementation grants to states that had received planning grants; indeed, Maine presented a comprehensive—and winning—plan in its application for an implementation grant, even though it had not received a planning grant. Of the eight states involved in the two demonstration programs, only two (Maine and Oregon) did not receive CCSSO planning grants.

Second, CCSSO chose its grantees through a competitive process. To select recipients of both the planning grants and the implementation grants, CCSSO published

formal grants announcements, solicited proposals, and used outside experts to review proposals and recommend awardees. DOL's selection procedure used available information to identify states that had made serious commitments to implementing systems of youth apprenticeship, while also obtaining diversity among the various state approaches. The timing of DOL's grants announcement coincided with the introduction of a legislative proposal supported by the Administration.

Third, because CCSSO is primarily concerned with education, the CCSSO demonstration program operated with a greater focus on schools and on education generally. Operationally, this distinction meant, for example, that CCSSO sent its grant solicitation to chief state school officers only. However, CCSSO imposed few operational restrictions on grantees; and the two demonstration programs differed little in terms of their relative emphasis on education, which was high under both programs.

Fourth, the CCSSO implementation grants were only one-fourth as large as the DOL grants. The CCSSO grants were \$50,000 over a one-year grant period (except that Pennsylvania received only \$25,000, because it was selected late in the grant period). In contrast, the DOL grants were \$200,000 each for a one-year period, although most states asked for and received time extensions.

EVALUATION DESIGN

The evaluation used a case-study approach that involved (1) the development of comparable case studies of state-sponsored activities in youth apprenticeship and related areas in each of the eight states and (2) cross-case analysis to address the three evaluation purposes. The evaluation team collected data on state activities using the following methods:

- An examination of program applications, work plans, and periodic reports prepared by grantees and submitted to DOL and CCSSO.
- At least one two-person site visit to each of the states, in which site visitors used a common protocol to interview state and local program administrators, service delivery personnel, employers, teachers,

students, representatives of organized labor, and others; site visitors also observed project operations and attended advisory group meetings.

- Observation of technical assistance meetings held by CCSSO and DOL and involving state program directors and others.
- Interviews with DOL and CCSSO program administrators.

Each site visit team was responsible for developing a detailed case study of each of the states that the team visited. These case studies provided the primary data used in analysis. Brief summaries of the case studies are included in the appendix to this report.

ORGANIZATION OF THE REPORT

The first chapter of the report provides a descriptive overview of the youth apprenticeship efforts underway in the eight states. The second chapter explores issues and experiences in the use of state government as the engine to drive improved opportunities for school-to-work transition. The next two chapters examine the relationships of new career pathways to schooling (Chapter 3) and employment (Chapter 4). Chapter 5 looks specifically at the operations and impact of the DOL and CCSSO program interventions. The final chapter presents the central conclusions of the study and their implications for public policy.

This chapter describes central elements of the eight state systems of youth apprenticeship and (as applicable) broader systems of career pathways that are currently under development, using tables to summarize and highlight differences and similarities. The first section summarizes the elements of each state's model, including its duration, its work-site and school-based elements, and its intended outcomes; it also describes the students and industries each state intends to serve through its initiative. The second section describes key administrative arrangements under the grants. The third section summarizes the progress each state has made in implementing its initiatives, including the number of pilot sites and student participants, the number of participating school districts and employers, and state policies on apprentice compensation.

This chapter is intended to present only an introductory overview of the states' system-development activities. Later chapters provide more detailed description and analyses of state efforts.

SERVICE CRITERIA AND TARGETED PARTICIPANTS AND INDUSTRIES

Several key features distinguish the eight initiatives at the point of service delivery.

SERVICE CRITERIA

Each of the eight states has established service criteria that include most of the common elements of youth apprenticeship: paid work experience, guided work-site instruction, integrated academic and vocational learning, articulation between secondary and postsecondary instruction, and a duration of at least two years. Some states have adopted a defined statewide model, whereas others permit local sites to design their own models using certain specified elements.

The existence of a state model does not necessarily mean that the model will be precisely implemented to those specifications at the local level, however. In some instances, the model's function is to set the outside parameters for local sites to use in developing their school-to-work initiative. Moreover, some elements,

such as a structured, articulated postsecondary component or a portable statewide certificate of mastery, are not so much requirements as they are long-term goals, which may not be immediately addressed in implementation.

The eight states used different methods to promote their service criteria. While some states were highly prescriptive (Maine), others were flexible (Michigan). Three states (California, Iowa, and Michigan) did not detail a specific model in their work plans, but instead allowed their local sites to design their own service models. However, even these states established requirements for local sites to develop programs that included certain school-to-work components. Two states, Oregon and West Virginia, drew heavily from the established registered-apprenticeship model when designing their service criteria. Tables 2 and 3 show several key characteristics of the service criteria adopted by the eight demonstration states.

Participating students in the demonstration states typically enter school-to-work programs in their junior year of high school, although the recruitment and selection process may take place in the spring of 10th grade. Under California's model, students enter a career academy (a school within a school that is organized around an occupational theme) in the 10th grade, although they do not begin work-site learning until 11th grade. As Table 2 shows, all states provide services over at least a two-year period. California, Maine, and Pennsylvania all use models that include one year of postsecondary education. The program sequence is typically designed to require the student to take on more responsibility and spend more time at the work site as the program progresses.

Table 2 shows that most states use or plan to use a written agreement to specify the responsibilities of each party in the youth-apprenticeship arrangement. Although agreements tend to focus on employers and students, some include parents and schools as well.

Table 2 also shows that most states envision their youth apprenticeship programs as expanding, not narrowing, the options available to participants after secondary school graduation. These options include continuing their education at a community or technical college, entering a registered apprenticeship program,

TABLE 2
PLANNED SERVICE PARAMETERS AND EXPECTED OUTCOMES¹

State	Program Duration and Sequence	Use of Written Agreements	Credential at Completion	Other Possible Outcomes
California	"2+1" structure. At least 3 years, including at least 1 year of postsecondary education.	Written agreements required, but no state model.	Certification of youth apprentice in a specific industry.	Further education.
Iowa	At least 2 years starting in 11th grade.	Not specified.	Recognized credentials of both academic and occupational skill mastery.	Further education at a community college.
Maine	"2+1" structure. 3 years beginning in the 11th grade. 11th and 12 graders take 20 weeks of regular high school classes and spend 30 weeks on the job, working 4 days per week and learning a tailored curriculum on the 5th day. During 13th grade, participants spend 16 weeks at a technical college and 34 weeks working for an employer.	Student enters into a written contractual agreement with the sponsoring business. The contract specifies the parties involved, the duration of the contract, stipend information, the youth apprentice's program and responsibilities, and performance evaluation procedures.	1-year technical college certificate and a Certificate of Mastery.	Continued education at a technical college to receive Associate's Degree.
Michigan	At discretion of local sites, based on state options.	Contents specified by state.	Certificate, high school diploma.	Admission to a registered apprenticeship program; specialized occupational training.
Oregon	11th and 12th grades.	Required	High school diploma.	Credit toward on-the-job training requirement for registered apprenticeship.
Pennsylvania	3 to 4 years, depending on the attainment of competencies and particular industry; at least 1 year of postsecondary education.	Student, parents, a representative of the secondary school, sign a training agreement for the apprenticeship position the student is hired to fill.	Credentials for academics and occupational skill mastery.	3 options: go directly to work, complete a traditional registered apprenticeship program, or continue college. Up to 2 years of postsecondary credits transferable to a 2- or 4-year college in Pennsylvania.
West Virginia	11th and 12th graders can enter registered youth apprenticeship and subsequently continue to community college to receive a Tech Prep Associate Degree or enter the adult registered-apprenticeship program.	An adaptation of the agreement used in the registered apprenticeship program.	Tech Prep Associate Degree.	Guaranteed placement in a registered-apprenticeship program that leads to employment as a journeyman or 3 other options: full-time work, completion of a Tech Prep Associate Degree, or enrollment in a B.A./B.S. program.
Wisconsin	11th and 12th grades.	Written agreements required.	State Certificate of Occupational Proficiency, based on industry skill standards.	Option of entering a post-secondary institution, seeking a registered apprenticeship, or obtaining a job.

¹ Data in Tables 2 through 9 were gathered during site visits conducted between March 1st and June 10th, 1993. Data were also obtained from grantee reports submitted to the U.S. Department of Labor (DOL) and the Council of Chief State School Officers (CCSSO).

or entering the work force in a technically skilled position. In addition, most states anticipate that successful completers will receive skills certificates that will be portable and recognized throughout the state or, with the establishment of national standards, across the country. Two states (Maine and West Virginia) specify a possible postsecondary credential.

Although none of the state models explicitly preclude postsecondary enrollment, some states link school-to-work transition more closely to higher education than do others. For example, some states' models explicitly describe entry into a four-year postsecondary

program as a possible outcome; but no plan specifies how this will take place or which four-year institutions will accept youth-apprenticeship credit. Enrollment with advanced standing at a technical or community college is a more common outcome. West Virginia, which views youth apprenticeship as an option under Tech Prep, offers youth apprentices the opportunity of earning a Tech Prep Associate Degree.

The combination of paid work experience and guided work-site instruction differentiates youth apprenticeship from other school-to-work options, such as cooperative education and Tech Prep. Indeed, as Table

TABLE 3
PLANNED WORK-SITE AND SCHOOL-BASED COMPONENTS

State	Work Experience and Work-Site Instruction	Summer Employment	Integrated Academic and Vocational Learning	Career-Counseling Activities	Link between Secondary and Postsecondary Education
California	Typically, unpaid internships during the 11th and 12th grade school years, paid structured work experience during the 11th and 12th grades, and part-time work during 12th grade.	Paid work in summer after 11th grade.	Plans include work-site instruction that is supervised, organized, and sequenced in conjunction with classroom learning.	Not specified.	Planned articulation between high school and postsecondary institutions, including community and 4-year colleges.
Iowa	Intensive work-site training planned.	At discretion of local sites.	Local site responsibility.	Provision of career development activities prior to grade 11. Formal career and occupational counseling for participants.	Planned articulation between high school and postsecondary learning.
Maine	Participants work at the job site for 30 weeks per year in 11th and 12th grade, and 34 weeks in grade 13. Work-site "meisters" serve as mentors, trainers, and supervisors. Year-round stipend, with annual increases.	Paid work in summers after 11th and 12th grades.	State plans to assist schools in integrating workplace learning into academic curriculum.	Career exploration beginning in the 9th and 10th grades.	Participants take courses at 1 of 6 local technical colleges for 16 weeks during the year following 12th grade.
Michigan	Paid work experience is required.	At discretion of local sites.	Local site responsibility.	Required.	Articulation agreements with postsecondary institutions are required.
Oregon	Based on the registered-apprenticeship model, involving rotation through varied assignments at the work site, supervision by a trained mentor, and gradual increase in job responsibilities.	Up to 44 hours per week.	Developing plans to tailor classroom-based learning to fit youth apprentices' job placement.	Participants are required to complete an 18-week career preparation course before work-based training begins.	Youth apprentices take related training courses with adult apprentices at community colleges or union training centers, in addition to high school coursework.
Pennsylvania	Participants spend 2 days each week on the job beginning in 11th grade, and 3 days per week in 12th grade. Participants receive wages that gradually increase during participation. Work-site mentor monitors youth apprentice's progress, acts as a resource to the youth apprentice in his or her working life, and provides youth apprentice with feedback.	Employers are encouraged, but not required, to hire youth apprentices to work during the summer.	A team of academic and vocational teachers integrates academic, technical, and occupational education based on the needs of industry.	Counseling is provided, with details determined locally.	In planning stage. Possibility of a new Associate's Degree in Specialized Technology.
West Virginia	Participants engage in paid work during the 12th grade under the supervision of skilled craftspersons/mentors who serve as work-site supervisors, evaluators, and coordinators.	Paid work in summer after 11th grade.	Tech Prep curriculum will be used.	Career-counseling activities beginning in middle school through service learning and career education.	Youth apprentices have the option of earning a Tech Prep Associate Degree at a community college.
Wisconsin	Participants work part time at least 3 school semesters with optional summer jobs; wage increases based on attainment of workplace competencies. Mentors provide on-the-job training in skilled occupational areas. Youth apprentices follow a systematic schedule of identified work activities and are rotated through major occupational areas.	Optional in summer after 11th grade.	Developed by local sites, based on state guidance, with industry driven work-based curriculum certified by the state.	Career-counseling and information centers, modeled after German service centers, will provide comprehensive career information as part of a K-12 guidance system.	Participants receive advanced standing or credit at a technical college, and keep options open for application to state university system.

3 shows, most state models require that youth apprentices participate in a paid work experience, and they also require that skilled mentors work with the youth apprentice at the job site. Some states, such as Maine, specify the mentor's responsibilities, whereas others are less prescriptive. Oregon and West Virginia use the registered-apprenticeship mentor as the model for their youth apprenticeship mentor.

California is the only state that calls for unpaid internships as part of the work-based learning process. Most states do not specify whether students should

activities in their model. Oregon, for example, made career-counseling activities part of a prerequisite for participation in the youth apprenticeship program. Building on the German model, Wisconsin is planning to develop career-counseling and information centers that will provide services statewide.

Whereas all states envision youth apprentices' finishing 12th grade with the option of postsecondary education in a field related to their work experience, not all states intend to implement this component immediately, preferring to focus now on the secondary school experience. Several states call for articulation agreements between secondary and postsecondary schooling but do not specify how these agreements will be developed, though other states are quite specific in their directions. The Maine model, for example, requires a year of postsecondary education at a state technical college, paid for by the student's employer.

TABLE 4
TARGETED PARTICIPANTS AND INDUSTRIES

State	Targeted Participants	Targeted Industries
California	No state-suggested eligibility requirements, but participating career academies focus on at-risk youth	Printing, health, finance, electronics, and shipping
Iowa	Non-college-bound students who are not at risk	Health, finance and insurance, construction, public utilities, information processing, and telecommunications
Maine	High school students who will not attend a 4-year college	Health, insurance, and machine tools
Michigan	Mainly non-college-bound students	No specific industry or trade targeted
Oregon	Students who are enrolled in a vocational education course in high school	No specific industry or trade targeted
Pennsylvania	Both non-college-bound students and those considering postsecondary education	Manufacturing, metalworking, and health
West Virginia	Students who are enrolled in a vocational education course in high school	No specific industry or trade targeted
Wisconsin	All students, especially those in the middle two quartiles	Printing, financial occupations, and health

work during the school day or after school. Summer employment is a component in most of the states; and in some states, the summer is the first opportunity for the student to enter the work site. In Maine and Pennsylvania, summer employment is a continuation of the work experience students begin during 11th grade.

An important component in youth apprenticeship is integrated academic and employment-related learning. As Table 3 shows, Pennsylvania's model specifies team teaching around an integrated, project-based curriculum. Among the eight states, only Oregon did not immediately plan to integrate classroom instruction and work-based learning.

Most of the eight states specified career-counseling

TARGETED PARTICIPANTS

As Table 4 shows, many of the states identify young people who either do not immediately pursue or unsuccessfully pursue a four-year baccalaureate degree—"the forgotten half"—as their primary target population. No state models identify at-risk youth as their main target, although Pennsylvania named this group as a population in its Request for Proposals (RFP) for its second round of grants to local pilot sites (although the actual profile of youth participants in these grants was not yet available when data collection was concluded). Also, California is focusing its efforts on career academies, which are designed to serve at-risk youth. Most states in this sample do not view youth apprenticeship as a program for all students or even a majority of students, but see it instead as one of several options available to high school students.

PRIMARY TARGETED INDUSTRIES

Five of the eight states targeted specific industries for their initial school-to-work pilot activities (see Table 4). The states made most initial decisions to target specific industries based on labor market information rather than the urging of specific industry representatives. Iowa, however, conducted focus groups with employers to determine which industries to target. Over half the

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**TABLE 5
LEAD ADMINISTRATIVE BODIES FOR DEMONSTRATION PROGRAMS**

State	Fiscal Agent for Demonstration Grants	Lead Planning/Implementation Body
California	Job Training Partnership Act Office within Employment Development Department of the Health and Welfare Agency (DOL grant) California Department of Education (CCSSO grant)	Youth Apprenticeship Steering Committee oversees planning, development, and implementation.
Iowa	Iowa Department of Education (DOL grant)	Work Start Interagency Steering Committee consisting of representatives of the Depts. of Economic Development, Employment Services, and Education and the Office of the Governor. Responsible for coordinating the development of the Work Start program.
Maine	Maine Technical College System (DOL and CCSSO grants)	Center for Youth Apprenticeship, a 501(c)(3) organization, guides statewide implementation, coordinates youth apprenticeship among 6 regional campuses of the state technical college system, and provides technical assistance to participating schools.
Michigan	Michigan Jobs Commission (DOL grant)	Governor's Workforce Commission oversees administrative activities, including grantee selection, and coordinates workforce development programs including Tech Prep.
Oregon	Oregon Bureau of Labor and Industries (DOL grant)	Bureau of Labor and Industries and Department of Education promote and develop youth apprenticeship through regional apprenticeship consultants.
Pennsylvania	Pennsylvania Department of Education (CCSSO grant)	The Office of the Secretary, within Department of Education, in a partnership that includes the Departments of Commerce and Labor and Industry.
West Virginia	West Virginia Department of Education (CCSSO grant)	State director from US DOL/Bureau of Apprenticeship Training (USDOL/BAT) and West Virginia Dept. of Education (WVDOE) jointly administer program. WVDOE • assists with curriculum development and dissemination • makes available networks of technical and adult learning centers to support apprenticeship programs • coordinates related services USDOL/BAT • provides technical assistance • shares information about labor market trends • establishes employer guidelines • refers employers
Wisconsin	Wisconsin Department of Administration (DOL grant) Wisconsin Department of Public Instruction (CCSSO grant)	Governor's Office for Workforce Excellence of the Dept. of Industry, Labor, and Human Relations administers programs with the involvement of the Department of Public Instruction and the State Board of Vocational, Technical, and Adult Education.

Note: DOL=U.S. Department of Labor, CCSSO=Council of Chief State School Officers.

states include health as one of their target industries. Four states also identify insurance or financial occupations as targeted industries. Two states target the printing industry. West Virginia, Oregon, and Michigan, which link youth apprenticeship with their existing registered-apprenticeship program, have not targeted specific industries.

STATE ADMINISTRATIVE ARRANGEMENTS

As Table 5 shows, states adopted a variety of administrative mechanisms for carrying out their responsibilities under the demonstration grants. In every instance,

they indicated that these arrangements would be used to implement longer-term improvements in school-to-work transition programming. Five states created new administrative bodies for this purpose. In interviews, state officials said that the new bodies would (1) help coordinate work-force-development initiatives spread across existing state agencies, (2) raise the visibility of school-to-work initiatives within state government, and (3) permit greater flexibility and innovation, since the initiatives would not be under the direction and influence of long-established vocational and job-training offices.

Table 6 identifies current state legislation relevant to

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**TABLE 6
CORRESPONDING STATE LEGISLATION**

State	Preexisting Legislation	Recent Legislation	Pending Legislation	Current State Appropriations
California	None.	None.	SB 781, placeholder legislation that would create a Workforce Preparation Council to ensure the implementation of school-to-work programs—called CA Career Pathways Programs—created by the bill.	No state funding.
Iowa	Work Start legislation was enacted in 1992. Vocational education legislation (SF 449) in 1991 created minimum school-level standards and requirements for vocational education.	None.	Bill to create overarching school-to-work programs introduced.	No new funding.
Maine	None.	Legislature established the Center for Youth Apprenticeship in May 1992, shortly after receiving the CCSSO and DOL grants.	None.	No state funds allocated.
Michigan	None.	None.	HB 4505 would create a statewide cabinet for professional and technical standards.	\$50,000 allocated for 5 additional challenge grants.
Oregon*	Law enacted in 1990-91 created program based on registered apprenticeship model and established youth apprenticeship wage.	SB 81 expands school-to-work opportunities beyond youth apprenticeship and provides work-based programs within a broader context of education reform.	Bill in legislature that would formalize the existing youth apprenticeship program.	SB 81 allocates \$325,000 to youth apprenticeship programs and \$775,000 to employer incentive.
Pennsylvania	None.	None.	Bill in legislature that would formalize the existing youth apprenticeship program.	FY 93-94—\$500,000 allocated; FY 94-95—\$1,000,000 planned.
West Virginia	Mandated the development of academic and vocational competencies and proficiency exams.	None.	Bill in legislature to determine future governance of youth apprenticeship.	None.
Wisconsin	Act 39/School-to-Work Transition Initiative established statewide youth apprenticeship program, gateway exam for 10th graders, Tech Prep curricula at each high school, and Youth Apprenticeship Advisory Council.	1993 bill transferred youth apprenticeship responsibilities to the Governor's Office of Workforce Excellence and established youth apprenticeship as one of several career pathways.	Proposed legislation would provide grants to employers to offset supervision and training costs.	Governor's FY 94-95 budget calls for \$300,000 for youth apprenticeship and \$365,400 for advisory group and Board of Workforce Excellence; \$920,000 for training grants; and \$300,000 for curricula grants.

*The enactment of SB81 in August 1993 is the only state activity reported here that occurred after June 1993. It is noted because it represented a fundamental shift in Oregon's policy regarding youth apprenticeship and School-to-Work transitions.

the school-to-work programs implemented under the DOL and CCSSO grants. All eight of the states have some type of legislative activity underway, whether it is an actual statute or a bill. Half the states, however, have no major statute in place yet.

**TABLE 7
PILOT SITES AND STUDENT PARTICIPANTS**

State	Operating Sites	Sites in Planning Stage	Number of Participants
California	6*	7	150**
Iowa	—	8	0
Maine	1	4	15
Michigan	6*	10	250-300***
Oregon	6	50	9
Pennsylvania	6*	10*	100
West Virginia	7	17	41
Wisconsin	2	5****	120

Note: DOL—U.S. Department of Labor; CCSSO—Council of Chief State School Officers.

* Includes some sites established prior to CCSSO and DOL grants.

** This figure does not include participants at Los Angeles site, because that number was not available.

*** Most students at preexisting sites such as Flint and Kalamazoo.

**** Wisconsin is starting 8 new programs at existing and new locations.

TABLE 8
PARTICIPATING SCHOOL DISTRICTS AND EMPLOYERS

State	Number of School Districts with Students Participating	Location	Industries	Number of Employers	Characteristics of Employers	Employer Incentives
California	5	Pasadena, Oakland, Los Angeles, Sacramento, and Bakersfield	Printing, health, and building construction	Numerous	20 medium-to-large employers, many small employers.	U.S. Department of Labor grant used to defray some costs of wages at Sutter Hospital; no other employer incentive provided.
Iowa	0	n/a	n/a	0	—	None.
Maine	4	South Portland and neighboring communities	Manufacturing technology, health, metalworking, and insurance.	8	2 are large corporations, 3 are hospitals and medical centers, and 3 are small tool and die makers	Center for Youth Apprenticeship issues paychecks and handles workers' compensation and insurance.
Michigan	6	Dispersed across the state.	Wide range, including machine tool, health, theater technology, baking, sales and marketing, and automated assembly system.	Numerous	Small businesses to large corporations.	None
Oregon	3	Portland and Eugene	Health and traditional apprenticeship trades (including sheetmetal and welding).	9	Medium to large businesses.	Tax credit for wages paid to youth apprentices; training vouchers in new legislation.
Pennsylvania	Multiple districts	Mix of urban and rural sites	Metalworking and health care.	79	Mostly small businesses, a few large employers	None.
West Virginia	7	Dispersed across the state.	Wide range.	35	Mostly small businesses, a few large employers.	None.
Wisconsin	12	Fox Valley, West Bend.	Printing.	Numerous	Large-to-medium businesses.	None. Legislation pending to provide grants to employers to partially offset supervision and training costs.

CURRENT STATUS OF YOUTH APPRENTICESHIP IMPLEMENTATION

The actual development of youth apprenticeship initiatives in each state varies. Pennsylvania has awarded two rounds of implementation grants to local sites, whereas Iowa has only awarded its first planning grants. Several states already had established youth apprenticeship sites before their state initiative. Oregon and West Virginia built their youth apprenticeship initiatives on existing registered apprenticeship programs well known in the business community.

Table 7 shows that all states have youth apprenticeship activities underway in local sites, although the activities in Iowa currently consist of planning only.

The states with the largest numbers of participants are California, Michigan, and Pennsylvania.

As Table 8 shows, states are involving varying numbers of school districts in youth apprenticeship. These differences partly reflect varied state policies regarding goals of either (1) developing a few intensive pilot sites or (2) disseminating the approach rapidly to districts statewide.

Although some states targeted specific industries for their youth apprenticeship initiatives, these were not always the industries that the pilot sites selected for involvement, as Table 8 shows. Some sites selected employers based on established ties or willingness to participate, rather than industry type.

With the exception of some career academies in

California affiliated with youth apprenticeship, employers in all states were required to pay their youth apprentices for their work, as Table 9 shows. In two states, West Virginia and Oregon, youth apprenticeship wages are related to registered-apprenticeship wages for the corresponding field. In Maine, participating employers were required to agree to pay for their apprentice's first year at a technical college.

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Although the bare bones of the states' implementation results indicate the early stage of these activities, the developmental efforts at state and local levels have been extensive and varied, as the next chapter indicates.

TABLE 9
STATE POLICIES ON APPRENTICE COMPENSATION

State	Policies on Wages and Other Compensation
California	No policies
Iowa	No placements yet
Maine	\$90-100 per week stipend over the entire year. Employer pays tuition for 1 year of study at a technical college
Michigan	Local issue that varies from site to site
Oregon	80% of registered apprenticeship wage or a training wage established by the local apprenticeship council not less than the state minimum wage of \$4.75
Pennsylvania	Local issue that varies from site to site
West Virginia	Wages for adult and youth apprentices are identical within occupational areas. Wages are usually not less than \$4.50 per hour, higher in unionized trades
Wisconsin	No less than minimum wage. Should be constant for all youth apprentices working in the same industry within the local consortium's jurisdiction

The central objective of the DOL and CCSSO grants was to encourage states to establish systems of youth apprenticeship that would contribute to broader efforts to facilitate school-to-work transition. The notion of a system is central to understanding what the eight demonstration states are trying to accomplish and why their tasks are difficult. In many cases, these states are simultaneously developing new types of transition-to-work options (i.e., youth apprenticeship and Tech Prep) and making efforts to bring coherence to established systems of academic and vocational education. Further, because of the emphasis on learning in the workplace, designers of these initiatives must work with a complex array of interlocking but poorly articulated systems that include school districts, higher education institutions, the registered-apprenticeship system, business and industry, and organized labor.

This chapter examines the climate for change in the eight demonstration states, the goals that they set for themselves, their broad strategies for system implementation, their governance and staffing arrangements for the school-to-work initiatives, and the major activities that they have carried out to implement their plans.

CLIMATE FOR CHANGE IN THE STATES

The eight states devoted substantial energy to creating a climate for change and building partnerships and consensus among key stakeholders in state agencies and among state officials and selected leaders from businesses and industries. Not surprisingly, states went about this effort in different ways. Some took a top-down approach, while others provided general guidelines from the state level and relied heavily on local initiative. Some states moved quickly to adopt state legislation and formal governance systems; others proceeded more informally. Many of the choices they made reflect political and cultural factors and the time-honored ways of doing business in each state.

In most states, development of youth apprenticeship was part of an evolutionary process, one that began before they received the DOL and CCSSO grants. States engaged many of the key constituencies over several years in a series of efforts to improve the quality of the state's education system and its competitive economic

position in the national and world economy. In many instances, these efforts produced some type of state plan related to youth employment. In most states, the DOL and CCSSO grants provided the funding necessary to refine and begin implementation of these plans.

Three primary activities stand out as especially supportive of early state interests in youth apprenticeship: (1) the establishment of special commissions or task forces to examine education quality and work-force trends and make recommendations for improvement; (2) study tours to Europe to view working apprenticeship systems; and (3) the leadership of the governor, state superintendent of schools, or other key individual in a state.

SPECIAL COMMISSIONS AND TASK FORCES

In the past five years, several of the eight states created special commissions or task forces composed of representatives from business, labor, education, and the public to examine the condition of their education systems and the competitive position of their industries and work force. In the reports of these groups, the need to improve the education of non-college-bound students and the desirability of creating integrated school-to-work transition systems emerged as key reform recommendations. In California, for example, shortly after the governor convened a state summit on education, the State Superintendent of Public Instruction in the spring of 1990 set up the California High School Task Force. The task force produced a seminal report in 1992, *Second to None*, that has been used to guide the state's secondary education reform. The report recommended that all 11th and 12th grade students choose an academic or career major and participate in field experiences, including workplace learning activities. Encouraging and complementing these efforts were a series of reports by leading business groups in the state that called for education reforms and specifically identified the need for youth apprenticeship.

In January 1990, Wisconsin's governor appointed the Governor's Commission on a Quality Workforce to study the state's system for work-force preparation. Its April 1991 report, *A World Class Workforce for Wisconsin*, recommended the establishment of post-high school enrollment options for graduates, a youth appren-

ticeship program, a Tech Prep program, and a statewide guarantee for students and employers seeking training through the technical college system.

The spark for Pennsylvania's program came from a series of high-level reports in the late 1980s on strategies for improving the state's economy. The analysts concluded that a revival of the state's traditional manufacturing base held the greatest promise of long-term economic improvement. Because manufacturing had been in a slump for a number of years, however, the analysts questioned whether the state had the skilled work force, especially young workers, that would be required to launch and sustain a statewide renewal of manufacturing industries. This concern led to the development of the Pennsylvania Youth Apprenticeship Program, with its initial focus on metalworking trades.

In the other five states, the development of support for improved school-to-work programming took similar forms: widespread interest in improving education combined with economic objectives, resulting in support for school-to-work initiatives aimed at youth who might not be headed to traditional baccalaureate programs.

STUDY TOURS TO EUROPE

In six of the grantee states, interest in improving school-to-work opportunities led public and private sector representatives to participate in study tours to Europe.¹ These tours were primarily sponsored by the German Marshall Fund of the United States and later by the Commonwealth Fund through grants to CDF International.² Participants credit these trips with helping them visualize youth apprenticeship as a system, rather than simply as another program. They say the visits convinced them that government could play an important role in nurturing the development of a school-to-work transition system in the United States. They also report that the study tours promoted camaraderie and the formation of working coalitions among key stakeholders that helped overcome some long-standing impediments to collaboration.

The youth apprenticeship initiative in Maine, for example, began as a result of a visit to Europe by the governor, the president of the technical college system, and other public officials and private sector representatives. According to the participants, the general plans for

the program were sketched out on an airline cocktail napkin during the return trip to the United States.

Similarly, trips by Wisconsin stakeholders solidified support for youth apprenticeship among state officials and local employers. Both of Wisconsin's initial youth apprenticeship sites were started by employers who participated in trips to Germany organized by state officials. In fact, the chief executive officer of a family-owned printing firm in the state was so impressed by what he saw in Europe during the winter of 1991 that, upon his return, he told his employees he was determined to launch a youth apprenticeship program in time for the next school year; by September 1992, 12 students were participating in a program in his plant. Wisconsin leaders also drew heavily on a German model for their proposed restructuring of the state's counseling and guidance system.

In Michigan, state and local leaders participated in European study tours during the 1980s; however, when the governorship changed hands, state officials involved in the original tours left government. As a result, most youth apprenticeship activity in Michigan in the early 1990s occurred at the local level, funded primarily by foundations, the federal government, and local resources.

LEADERSHIP OF THE GOVERNOR, STATE SUPERINTENDENT OF SCHOOLS, OR OTHER KEY OFFICIALS

Efforts in most states were initiated and enhanced by personal leadership from the governor or other state officials. In Maine, for example, the governor personally led the exploratory trip to Europe and took an active role in planning, program design, and employer recruitment. As a result, the Maine program is clearly identified in the minds of educators and employers as the governor's initiative. In California and Wisconsin, much of the initial interest in youth apprenticeship was spurred by the elected chief state school officers, although governors in both states are active supporters of the initiative. As noted, the business community also played a key role in California, pressing the governor, the legislature, and the state superintendent for education reforms that would include more attention to non-college-bound youth. In Wisconsin, the governor followed up his Quality Workforce Commission's recommendations by supporting state leg-

islation to create a Youth Apprenticeship Steering Committee. The governor spoke forcefully on the need for youth apprenticeship in his 1993 state-of-the-state address and introduced apprentices to the audience during his presentation.

In Pennsylvania, state cabinet officers under the governor's direction, along with the business community, provided early leadership. In response to the deterioration of its manufacturing industries and the aging of its skilled work force, Pennsylvania's Secretary of Commerce established Industrial Resource Centers to provide technical assistance and support to manufacturing firms. The state is using these centers as a central part of its strategy to initiate youth apprenticeship at local sites throughout the state. In Oregon, a state legislator, who served on the Commission on the Skills of the American Workforce, was a key player in the state's adoption of a comprehensive package of reforms, based on recommendations by the Commission in its 1990 report, *America's Choice: High Skills or Low Wages!* The strong momentum in support of reform helped enact both work-force development and education reforms in Oregon.

In each of these initial activities, states began to establish important relationships among key stakeholders and develop a vision for the future in which youth apprenticeship and related school-to-work transition strategies would play an important part.

STATE ACTIONS TO CREATE A VISION AND SET GOALS

States relied on national reports, their own state studies, and study tours to develop their vision for youth apprenticeship. In all eight states, this vision encompassed two major concerns: the need to improve economic competitiveness and the need to upgrade the quality of education in the state, especially for those high school students who are not on a college preparatory track. State officials involved in youth apprenticeship see it as a strategy for addressing both of these needs, and they emphasize both needs in their literature on the program. They view youth apprenticeship as a way of providing young people with a high level of academic, technical and work-readiness skills needed in today's

workplace. They also see youth apprenticeship as an educational strategy embodying those aspects of cognitive science research which suggest that young people will assimilate information more effectively through hands-on learning in a real world context.

DIFFERENCES IN GOALS FOR STUDENTS

Whereas all the states stress both economic and education reform goals, there are subtle differences in emphasis among them, particularly in terms of the expected impact of school-to-work programs on student outcomes. For example, in California, the school-to-work initiative is primarily viewed as an *educational* intervention—a way to engage young people, enhance high school completion, and prepare students with the skills necessary to pursue a variety of options following high school graduation. Designers of the California initiative view school-to-work opportunities as vehicles for both college and career path preparation. In short, the California initiative sees school-to-work training—in terms of its utility as an approach to curriculum and instruction—as being appropriate for individuals with many kinds of personal goals. The state's high school reform report, *Second to None*, states that if a student has chosen a career theme in high school, "whether the student eventually works in that field is not as important as the opportunity to apply academic and conceptual skills in a meaningful, adult-world context and learn many skills applicable to other careers."

By contrast, the goals for school-to-work programming in Pennsylvania, Oregon, and Michigan are much more clearly focused on preparation for work in a specific field. In Pennsylvania, where the pressure for youth apprenticeship came from industry and state leaders concerned about improving economic conditions, the initiative emphasizes preparation for high-skilled technical employment. Similarly, Oregon's original initiative is part of the state's comprehensive economic development strategy designed to respond to concerns about stagnation in the creation of skilled jobs in the state. It was adopted separately from the state's comprehensive education reform act and linked closely with the registered-apprenticeship system. Efforts to create a state school-to-work system in Michigan are also most closely linked to the Governor's Workforce Commission, rather than to any

educational reform activities.

In Wisconsin, Maine, and West Virginia, school-to-work training is viewed both as part of a work-force development strategy and as an important part of education reform. However, unlike California, these states perceive youth apprenticeship as an educational strategy for students (mainly good students) who, for whatever reasons, do not plan on attending four-year institutions of higher education. For example, in Wisconsin, youth apprenticeship is part of a school reform initiative that will eventually include a gateway assessment for 10th graders, after which students will choose either a college preparatory, Tech Prep, or youth apprenticeship pathway, each of which is planned to link to a postsecondary education option. Maine's plan—which involves grades 11-13—suggests that youth apprenticeship will be one of seven pathways for high school students; participation in youth apprenticeship will result in a certificate, and participation in Tech Prep will lead to an Associate of Arts degree. In West Virginia, where the youth apprenticeship initiative is a joint venture of the state Department of Education and the DOL Bureau of Apprenticeship and Training, program designers also envision several options for 11th and 12th graders. Students who choose youth apprenticeship would enter a registered-apprenticeship program while still in high school. After graduation, they would make another choice—to continue the apprenticeship full-time to journeyman status or to pursue a Tech Prep Associate Degree while continuing part-time in the registered apprenticeship.

The differences in these state visions and goals are subtle. However, because they suggest different outcomes for students, these visions affect decisions on program design, and they help shape the receptivity of educators, employers, students, and parents to various career pathways.

GOAL CONSENSUS WITHIN STATES

In addition to differences among states, the evaluation found that different stakeholder groups within the states (e.g., state officials, educators, and business and labor leaders) tend to expect very different outcomes for participating students. Although these differences were often glossed over in initial planning and implementation activities, they were evident in interviews for this study

and may become more pronounced and troublesome as programs grow and become institutionalized. Some state and local stakeholders want to keep all options open for secondary school students participating in school-to-work initiatives; that is, they want students to have the option of transferring to another pathway during high school or attending a four-year college directly after graduation from high school. Others believe that students can be prepared to choose a pathway during high school, usually after 10th grade. In the latter view, some students would choose the college preparatory track for entry to a four-year college, whereas others would choose Tech Prep, youth apprenticeship, or other pathways that could lead to one- or two-year community/technical college programs, registered apprenticeship, or employment.

In general, academic educators, school administrators, and parents want maximum options for students after the 12th grade. They see education reform as a way to dramatically improve the quality of education for all young people. Many expressed serious concerns about closing off the option for youth apprentices to go directly to four-year college following high school graduation. In some sites, there are anecdotal reports that educators and parents appear more willing to endorse school-to-work programs if they are presented as options to improve the learning experience and raise the academic and technical skill levels of young people, while at the same time keeping all their postsecondary options open.

In contrast, business leaders generally see education reform as part of a comprehensive strategy to revitalize the state's economy and prepare a more highly skilled work force. Participating employers speak of the need to improve the quality of education and the technical competence of students not bound for four-year colleges. Employers understand that some participating students may want to attend postsecondary technical or community college programs. However, because of the investment in time, supervisory staff, and wages required by youth apprenticeship programs in particular, employers mainly say they want to train students who will work in their industry over the long term. When asked, employers tend to state that school-to-work programs should focus on developing work-readiness skills, general occupational skills, and the specific academic skills necessary

to perform technical jobs in their industry or related field.

The choice of goals often affects the decision on where to locate school-to-work programs within a school system. Because educators who initiated youth apprenticeship in California want participants to have a broad range of options upon graduating from high school, they chose career academies as the primary focus of their youth apprenticeship initiative. Teachers in career academies pride themselves on preparing their students for college, as well as for careers. By contrast, in Maine, Oregon, Pennsylvania, West Virginia, and Wisconsin, the goals for youth apprentices center on preparation for technical college, registered apprenticeship, and career ladder jobs. In these states, pilot projects tend to be housed within secondary vocational education programs or technical colleges; and the work site is a focal point for learning. School and business partners in these states understand that some participants may want to attend four-year institutions, and they try to work with individuals to help them meet these goals. However, they anticipate that most students will not go directly to four-year institutions.

In each of the states included in this study, the state's predominant choice of goals is not always understood or shared by all stakeholders at the state and local level and can affect the willingness of employers, educators, parents, and students to participate. For example, in Oregon, where the Labor Commissioner and Superintendent of Public Instruction are both elected, officials variously spoke of school-to-work programs as a way to motivate students at risk of dropping out of high school, revitalize vocational education and community college programs, and make students more productive during their early years of employment. Oregon's initiative is managed, in part, by the labor and industries department and is closely linked to registered apprenticeship. Reacting to those arrangements, key leaders of the state's largest teachers' union reportedly opposed the youth apprenticeship program; and educators appear to be concerned about the tracking of students and the use of applied academic concepts. In the fall of 1993, the state adopted new legislation to create a school-to-work program within the Department of Education that will emphasize broader outcomes for students; this new pro-

gram will link to the youth apprenticeship program.

In several states, differences in perception of desired goals for youth apprentices have created significant tensions, especially among educators and employers at local sites. In California, where the state is emphasizing a strong industry role in program design and development, business leaders are vocal advocates for school reform, yet they question the goal of preparing all students to attend four-year college—something valued by most participating educators. The governor of Maine initially viewed youth apprenticeship as a program that would include college-bound students, and a number of Maine's 15 original apprentices were enrolled in a college prep courses prior to entry into youth apprenticeship. As the program is now structured, however, if these students want to enter a baccalaureate program, they may have to drop out of youth apprenticeship in their senior year to complete the academic requirements for admission to a four-year college. In Michigan, the state is stressing work-force preparation goals, while a number of local sites are emphasizing educational improvement goals.

EFFECTS OF DIFFERING GOALS ON PROGRAM OPERATIONS

The choice of expected outcomes for students also affects program design, curriculum development, and relationships with postsecondary institutions. For example, states and local sites that want to provide participating students with the option of transferring to another pathway during high school or attending a four-year college following high school graduation must address issues that are not of immediate concern to programs with a career-preparation focus. These maximum-option sites must make sure that students are prepared for SAT or ACT exams and that they meet four-year college entrance requirements. These sites also must work closely with four-year colleges to address concerns about the rigor of applied academic courses and work-based learning. Sites that want to include a two-year community or technical college option for students need to be sure that graduating high school students meet the entry requirements for two-year associate degree programs. Most community colleges have open admission policies, but entry into their associate degree programs depends on space available and requires certain prerequisite courses.

If sites want students to be able to receive community college credit for courses taken during high school, they also need to set up articulation agreements with the community and technical school.

FACTORS AFFECTING THE CHOICE OF GOALS

The choice of dominant goal in each state or locality reflects the interests of the dominant actor at the time the school-to-work initiative was developed. For example, in California, the State Superintendent of Public Instruction played a key initiating role, and the state's program reflects his strong interest in education reform. Similarly, the Wisconsin initiative mirrors the desire of the then-state Superintendent of Public Instruction and other state officials to improve the quality of education and workforce preparation for youth not bound for four-year colleges. The Oregon legislation is based in part on the recommendations of the Commission on the Skills of the American Workforce, and a state legislator who served on the commission was instrumental in steering it through the legislature.

Goals at the state and local level may shift over time. In fact, as already noted above, some shifting is already taking place. For example, in Oregon, a new, more broadly based school-to-work program has been established that now incorporates the youth apprenticeship effort. In California, where the initiating State Superintendent of Education and key staff have left state government, the interests of the governor, the head of the Employment Development Department, and the employer community, as well as the advent of state legislation, may shift the focus of the initiative.

A state's cultural heritage appears also to affect its choice of goals. Wisconsin, Pennsylvania, West Virginia, and California are good examples of this phenomenon. The first three states have strong manufacturing and union traditions that value technical preparation and careers. In contrast, California prides itself on its university system; academic education and professional and skilled service positions are highly valued in the state. Industry versus the professions is not, of course, an either/or situation. All states value education and also want to encourage industry. However, there are traditions and cultural values that are dominant in certain states. Where the initial choice of goals reflects the domi-

nant cultural values in a state, the overall direction and goals of the initiative in those states may not change dramatically even if the state leadership changes. However, if the initial goals are not consistent with these values, program direction may shift over time.

BROAD STATE STRATEGIES TO IMPLEMENT SCHOOL-TO-WORK OBJECTIVES

The eight states took very different approaches to the development of state systems for school-to-work transition. Half the states adopted top-down implementation strategies; the other half employed a bottom-up approach, relying more on local leadership to develop pilot programs. These decisions have, in turn, been driven by state tradition, politics, and accepted practices of implementing new initiatives within the state. The presence or absence of state legislation on school-to-work programs has had surprisingly little effect on choices about implementation approach.

THE TOP-DOWN APPROACH

Pennsylvania, Wisconsin, Maine, and West Virginia are using a top-down strategy. These states set out clear guidelines for local programs and adopted a hands-on approach to local site development. The activities undertaken by these states include: preparation of statewide information brochures; curriculum development; training sessions for educators, employers, and workers; on-site technical assistance; marketing to key stakeholders; and networking among sites.

For example, in Pennsylvania, while the state encourages local flexibility and diversity and operates youth apprenticeship with only a very thin state-level infrastructure, it also provides strong leadership in the development of local programs. It identified a set of programmatic principles for youth apprenticeship and uses the state-supported Industrial Resource Centers as intermediaries between secondary-level technical/vocational schools and manufacturing employers. The state develops program materials and curricula and provides training for teachers and workplace supervisors.

Wisconsin designed specific guidelines for local site development, generates work-based curriculum in key

industries, and is marketing the program heavily to employers and school districts. The state also developed a blueprint for revamping its career guidance and counseling system and hopes to pilot the new approach in five sites around the state.

Maine created a Center for Youth Apprenticeship to guide statewide implementation and coordinate the program among the six regional campuses of the Maine technical college system. The Center oversees job-site development and business relations, researches apprenticeship programs in the United States and abroad, develops curriculum and standards, and provides technical assistance to Maine schools.

In West Virginia, the state conducts numerous training sessions for educators, employers, and others to interest them in youth apprenticeship and other school-to-work options; and state staff actively participate in the development of local youth apprenticeship slots. Staff developed a series of pamphlets, brochures, and guides for counselors, cooperative education teachers, and vocational education staff. They have disseminated these materials around the state, field-tested the materials, and used them as the basis for inservice training.

THE BOTTOM-UP APPROACH

Iowa, Michigan, Oregon, and California use a bottom-up approach and tend to view local programs as experimental models, although they have also provided technical support and dissemination services from the state level. Most of these states identified certain parameters for local program development; as noted, Oregon even established specific requirements in its state legislation. However, states in this group appear to encourage local experimentation with program components and implementation strategies; and they rely on local leadership to provide direction to pilot program implementation. Though these states provide financial support and even recruit local stakeholders, in general they offer less technical support to local sites than do the top-down states. In some instances, this approach reflects the philosophy of the governor or lead initiating agency; and in other instances it reflects political realities and accepted ways of doing business within the state.

In Iowa, state legislation requires the creation of local employment and training advisory committees to identify

employment opportunities and resources, develop program specifications, and establish some broad program guidelines. In essence, however, the state has said that the locally funded projects will define the initiative by their actions. This is similar to the approach the state is using to establish state educational outcomes; that is, local districts will identify outcomes first, and the state will use these as the basis for developing statewide standards. There is a strong belief among state officials that what comes out of a consensus-building process is much more likely to last.

Michigan's statewide RFP set out guidelines for local program development. For example, programs are expected to provide academic instruction that meets state educational standards; include structured work-based learning that teaches occupationally specific knowledge and skills; provide for an agreement among student, parent, employer, mentor, union, and school; offer paid work experience; and provide career and occupational counseling. However, local sites will develop the specifics. The state is taking a "call us if you need us" approach, indicating that it will be available for technical assistance as needed. Michigan hopes to achieve some statewide consensus on what youth apprenticeship is, create a network of local sites, provide technical assistance as needed to launch new sites and, once the system is up and running, let it continue on its own. Michigan has a tradition of strong local control; by law, if a state agency mandates any type of programmatic reform or addition, the state must pay for it. Therefore, state legislation, such as the state's most recent education reform law, are frequently worded as endorsements but not requirements. A number of local Michigan sites participated in trips to Europe and received demonstration grants from the federal government or philanthropic foundations before the initiation of the state-level activity. Thus, these sites have had time to develop further than the state's own design and implementation effort.

In Oregon, although state legislation establishes specific requirements for local programs, the state decided not to target a particular industry or trade but to work instead with a small number of participating high schools. The state education agency is developing a career preparation curriculum and registered-apprenticeship staff help develop job sites, although in general local

sites have a high degree of autonomy.

In California, the consultants staffing the state project are instrumental in recruiting employers and bringing educators and employers together to facilitate local site implementation. They also troubleshoot when problems arise. The state steering committee developed a set of guidelines for local program development and identified some key industries for attention, but in general the state is pursuing an industry-driven, bottom-up approach. This strategy is enabling the state to see how some of the proposed high school reforms might be accomplished and to test out new work-based learning techniques. Pilots are also demonstrating ways to involve employers more closely in the education process, and providing an opportunity to experiment with how much workplace learning can take place and how to structure it effectively. California's approach uses industry leaders to promote change within local schools, and, according to program literature, helps the state "identify barriers, set up relationships, structure curricula, find funding mechanisms, and use this experience as blueprints for the expansion of the concept both to other parts of the state and into other industries."

THE ROLE OF STATE LEGISLATION IN SHAPING STATE IMPLEMENTATION

Among the eight demonstration states, Iowa, Maine, Oregon, and Wisconsin adopted legislation to help launch their youth apprenticeship efforts. In Oregon and Wisconsin, the youth apprenticeship initiative was part of a larger work-force competitiveness package. In the other states, it was a stand-alone effort. State legislation in these places has served two primary purposes—creating governance mechanisms and sparking the development of local pilots through the establishment of parameters for their development and authorization of state funding for them.

Laws Creating Governance Mechanisms. In Maine and Wisconsin, legislation created new structures to guide and administer youth apprenticeship. Maine established a Center for Youth Apprenticeship, while Wisconsin created a Youth Apprenticeship Advisory Council composed of vocational education instructors, high school teachers, business and organized labor repre-

sentatives, and administrators of technical colleges and high schools. Wisconsin's legislation gave the Council responsibility for overseeing the operational standards of the youth apprenticeship program and making recommendations on ways to improve the school-to-work transition of youth. The legislation also lodged responsibility for administering the initiative with the state Department of Industry, Labor, and Human Relations. Oregon's legislation assigned responsibility for its youth apprenticeship initiative to the Apprenticeship and Training Division within the state Bureau of Labor and Industries.

Laws Guiding Local Program Development. Laws in Iowa and Oregon specify local program requirements and authorize funding for local program development. In Iowa, state legislation requires the creation of local employment and training advisory committees to develop program specifications and identify employment opportunities and resources. The legislation describes a two-phase program: a preparation phase consisting of a school-based program to provide students with basic and advanced academic skills necessary to their chosen vocational area, and a workplace phase consisting of an intensive workplace-specific training program that may be conducted at the work site or in both work-site and classroom settings. Oregon's original youth apprenticeship legislation laid out the parameters of its program based on the registered-apprenticeship model. The law prescribed that, before entering youth apprenticeship, students must be at least 16 years old, be enrolled in a vocational education program at school, and have completed an 18-week career preparation program. It set limits on the time a youth apprentice can spend in various educational and work-related activities. It required all employers providing work site training slots to be registered training agents, and prevented a single employer from having more than three youth apprentices at a time. The legislation also prescribed the ratio of apprentices to journeypersons at the work site.

State Decisions to Adopt or Revise Legislation. Decisions on whether to pursue legislation are influenced by state politics, as well as by judgments about how best to launch a new initiative when cooperation across state

agencies is a critical feature. States that adopted legislation believe it signals the importance of the initiative and creates a more stable base for institutionalizing it. However, state laws have usually assigned youth apprenticeship to one state agency or entity, and the initiative has become identified with that agency and its mission. This has inserted youth apprenticeship into traditional agency rivalries, and states have been wrestling with how to reconfigure their programs to surmount these turf problems.

Some states that achieved an early start with legislation are making midcourse corrections, based on implementation experiences. For example, in Oregon, revised legislation, contained in Senate Bill 81, was passed in August 1993 to "expand school-to-work opportunities beyond registered youth apprenticeship."¹ The bill establishes a broad program under the Department of Education that will emphasize a variety of work-based learning experiences for up to 1,900 students over two years. The new initiative has a biannual budget of \$1.1 million, of which \$100,000 will go to the state's existing youth apprenticeship program; and \$1 million will go to the Department of Education, which will use its portion of the funds to support teachers and local coordinators, transportation, and administration of the educational service credit program. Though this new initiative includes many of the concepts from the original legislation, there are some significant changes. The new work-based learning program will be available to all employers, not just registered training agents. The original tax credit for participating employers will be replaced with a training voucher. The new law also requires skilled mentoring and preparation in broad occupational areas. The restrictions on the number of apprentices per employer and ratio of apprentices to journeypersons are removed, and the State Apprenticeship and Training Council is given responsibility for setting appropriate youth apprentice/employer ratios. The new act revises and broadens participation requirements and describes the components that must be present in work-based learning programs. It also gives the local and regional Workforce Quality Committees a larger role in planning local programs.

In Wisconsin, a 1993 budget bill transferred the responsibilities for youth apprenticeship from the Bureau

of Apprenticeship Standards to the governor's Office for Workforce Excellence. The legislation also changed the name of the Youth Apprenticeship Advisory Council to the Council on Workforce Excellence, expanded the council membership, and enlarged the council's responsibilities to include advising on the implementation of a variety of work-force excellence initiatives, programs, and policies.

Decisions to Defer State Legislation. Some states have resisted legislation, preferring to take a more informal approach. These states use informal mechanisms to facilitate experimentation, coalition-building, and midcourse corrections. In Pennsylvania, where there is no legislative base, the state appears to have created a solid foundation and intends to expand from 6 to 15 sites by the fall of 1993. California's informal approach helps navigate difficult political and fiscal conditions. In that state, there are many separate programs with independent budgets and political constituencies; and the state bureaucracy is massive and complex, with responsibility for education, job training, and apprenticeship programs scattered throughout a number of departments and agencies. Task forces, steering committees, consultants, and demonstrations are often used in California to deal with complex political and bureaucratic issues. In addition, the business community often serves as a force to leverage change at the state and local level.

Some states that started out informally are now considering legislation. A bill is pending in the Pennsylvania legislature that would formalize the state's program; however, some state officials oppose legislation, fearing that it would have a "limiting, stultifying effect on the program and would unnecessarily constrain its grassroots character." In March 1993, a bill, which embodies many of the features favored by key stakeholders, was introduced in the California Senate to create a Workforce Preparation Council and a Career Pathways Program. It is described as a placeholder bill that will be finalized when details of federal legislation are known. Like California, several states are waiting to take their cue from final federal legislation before proceeding with state legislation.

STATE GOVERNANCE AND STAFFING ARRANGEMENTS FOR STIMULATING YOUTH APPRENTICESHIP AND OTHER CAREER PATHWAYS

States are using a variety of governance mechanisms to guide implementation and bring together the diverse public and private interests necessary to make their youth apprenticeship initiatives successful. Youth apprenticeship requires cooperation among a variety of public agencies and the establishment of working relationships between state agencies and business and labor interests. Statewide steering committees are the mechanisms most often used to foster these relationships.

STATEWIDE STEERING COMMITTEES

All eight states formed some kind of advisory body or steering committee composed of key public and private stakeholders to oversee their initiative. Some of these committees, like the ones in Maine and California, focus exclusively on youth apprenticeship; others, like those in Michigan and Oregon, are broad based and provide advice on an array of work-force development issues. In states where youth apprenticeship comes under the purview of a broad-based committee, there is usually a subcommittee of the primary group or a separate advisory committee that focuses exclusively on youth apprenticeship. A few states that started with a single-purpose council are moving to incorporate youth apprenticeship under the aegis of more broad-based councils.

In addition, all eight states envisioned advisory bodies at the state level with membership that includes representatives from business and education. Most also include organized labor. Some advisory bodies were regularly involved in the development of their state's initiative, as in Iowa, where the advisory board designed the Work Start RFP and selected the local grantees. Other advisory bodies were less involved, as in Pennsylvania, where most of the implementation was carried out by the Industrial Resource Centers.

Maine created a Policy Advisory Board charged with setting statewide performance standards for apprenticeship occupations and ensuring that Maine's Certificate of Mastery is recognized throughout the state and region. Members serve three-year terms and meet at least three

times throughout the year.

Iowa has a Work Start Advisory Committee, appointed by the governor, which was created to help develop criteria for funding local pilot sites and advise in the development of the youth apprenticeship system.

California's project is governed at the state level by the Youth Apprenticeship Steering Committee. This committee is not officially appointed; its membership is determined on the recommendation of key state agency representatives, committee members, and project staff.

In 1993, Michigan's governor created a state Human Resource Investment Council by executive order to replace the Michigan Job Training Coordinating Council. The new council will have responsibility for overseeing the development of youth apprenticeship policies and will also advise the governor on Job Training Partnership Act (JTPA) programs, the Job Opportunity and Basic Skills (JOBS) program, the Michigan Occupational Information System, state Head Start funds, and the Community Service Block Grant. Because the council has no responsibility for education programs, including vocational education, the governor is also expected to create an Advisory Committee on Youth Apprenticeship. Youth apprenticeship also nominally comes under the purview of the State Apprenticeship and Training Council in Michigan. However, this group's role in implementing youth apprenticeship has been indirect, in part because of the role played by the new Governor's Workforce Commission.

In Oregon, the governor was authorized to appoint a state Workforce Quality Council to unify all existing work-force training programs. The council is also directed to support school restructuring and promote professional/technical education. It has announced a goal of involving 35,000 students in work-based learning by the year 2000.

In West Virginia, three councils play a role in overseeing the development of school-to-work opportunities. The Joint Commission for Vocational-Technical-Occupational Education, created by state legislation in 1989, serves as a super council to oversee work-force education programs throughout the state. Members are appointed by the governor and have jurisdiction over funds received under the Carl D. Perkins Vocational and Applied Technology Education Act, including Tech Prep.

The Commission also serves as a forum to sort out issues between secondary and postsecondary institutions involved in employment-related education. The Joint Apprenticeship and Training Advisory Council offers advice on youth apprenticeship, reviews documents and policies, and provides feedback to state staff. A third body, the Youth Apprenticeship Development Committee, consists of state officials with direct interests in youth apprenticeship; it reviews policies and brainstorms solutions to local problems.

Some of the committees in Iowa, Maine, Michigan, Oregon, West Virginia, and Wisconsin are codified in legislation; others, including those in California and Pennsylvania, operate informally.

One of the main accomplishments of these statewide advisory bodies has been to bring state agency heads together on neutral turf to work out issues that cut across agency jurisdictions. For example, if problems arise with the development of articulation agreements between secondary schools and community colleges, they can be raised and discussed at committee meetings. Another important role is to give business and labor opportunities to come together in neutral forums and to express their views to educators and government officials. Most committees are primarily advisory, with roles limited to reviewing state-proposed activities and directives and participating in local pilot site selection. However, in a few states, such as California and Wisconsin, committees are playing a significant role in driving project development and implementation.

STATE ADMINISTRATIVE BODIES

States have assigned youth apprenticeship to a variety of state agencies. Five states have lodged administrative responsibility in new offices that have interagency responsibilities and greater access to the governor. Several of these new offices have especially strong ties to existing education or labor departments. Two of the other states (Pennsylvania and West Virginia) assigned lead responsibility directly to the state department of education, and one state (Oregon) assigned main responsibility directly to the state Bureau of Labor and Industries' Apprenticeship and Training Division.

Because youth apprenticeship involves collaboration between school and work, the issues that arise tend to

cut across several departments and agencies. States are wrestling with ways to engage all the key agency stakeholders—secondary education, higher education, and labor departments—more effectively in program administration. States are using interagency agreements, internal steering committees, executive cabinets, and other mechanisms to coordinate day-to-day operations and deal with the complex array of cross-agency issues that arise. As states have gained experience, several are adjusting their governance arrangements in an effort to find the right home for youth apprenticeship and other school-to-work pathways.

In three states, steering committees composed exclusively of state officials have been created to deal with administrative issues. In California, the lead officials in the state's education and labor departments and community college system serve as an informal executive panel of the state advisory committee. Maine has created a new entity to administer its initiative.

In West Virginia, the state's representative of the federal DOL Bureau of Apprenticeship and Training and the Division of Technical and Adult Educational Services of the state Department of Education adopted a cooperative working agreement that spells out the roles and responsibilities of each agency in promoting work-force development. In 1992, the agreement was revised to include youth apprenticeship. State officials cited the process of developing this agreement, which began over five years ago, as one of the key elements of their initiative. The three-page agreement outlines specific resources and activities that each agency will contribute to advance their working relationship and increase opportunities for youth and adults participating in their programs. In addition, the Youth Apprenticeship Development Committee, noted previously, consists of state officials with direct interests in the project.

Iowa has a Work Start Interagency Steering Committee, appointed by the governor, which consists of representatives of the Departments of Economic Development, Employment Services, Education, and the governor's office. The Interagency Steering Committee is responsible for developing and implementing the Work Start plan and has designated the state education agency as the administrative entity for Work Start.

In Michigan, the newly created Governor's Workforce

Commission has the administrative lead, although the Michigan Department of Education appears to be taking on a stronger role, particularly now that it is funding five sites. Its Office of Career and Technical Education is charged with helping to provide technical assistance to participating schools. The state also formed an interagency strategic planning group as a result of an agreement between the State Superintendent of Public Instruction and the Director of Labor to develop a unified state plan for youth apprenticeship. The work group includes senior staff from both these agencies as well as the Project Coordinator for the DOL grant.

Although the technical college system is the state agency with responsibility for the initiative in Maine, the state also created the Center for Youth Apprenticeship to guide statewide implementation and coordinate the program among the six regional campuses of the Maine technical college system. The Center oversees job-site development and business relations, researches apprenticeship programs in the United States and abroad, develops curriculum and standards, and provides technical assistance to Maine schools. The Center itself is overseen by an International Advisory Board of Governors composed of international and national leaders in business, labor, and education.

In Oregon, youth apprenticeship operates largely through the same organizational structure as the adult apprenticeship program. As noted, the state Department of Education has responsibility for a new school-to-work transition program that will be integrated into the earlier youth apprenticeship initiative. The Department of Education's Office of Professional/Technical Education also received half of the DOL grant and has used it to fund a consultant and pay for teacher release time to develop the career preparation curriculum mandated by the youth apprenticeship legislation.

In Wisconsin, initial responsibility for the administration of the initiative was assigned to the Bureau of Apprenticeship staff within the Department of Labor, Industry, and Human Relations, requiring cooperation with the Department of Public Instruction and the State Board of Vocational, Technical, and Adult Education. The Bureau staff played an integral role in implementation. When responsibility was reassigned to the newly created Governor's Office for Workforce Excellence, staff

from the Bureau continued to work on the initiative through a temporary assignment to the new office.

In Pennsylvania, initial governance of youth apprenticeship was closely tied to one individual who worked for the Secretary of Labor and Industry when the program started. When the individual moved to the Department of Commerce, the administration of youth apprenticeship moved with him. This shift made sense in light of Commerce's responsibility for the Industrial Resource Centers. When this person moved to the office of the Secretary of Education, the administration of youth apprenticeship was shifted to the Secretary's office, where it is currently housed and where its organizational placement can permit links to education reform activities.

In California, youth apprenticeship funds are split between the Department of Education and the Employment Development Department, with the community college system also receiving some funding for staff support. Top-level representatives of these three agencies serve as an informal executive committee for the project. However, the Youth Apprenticeship Steering Committee provides significant guidance to the initiative, and day-to-day management is in the hands of an independent consultant who coordinates the activities of the steering committee and local site development.

STATE STAFFING TO ADMINISTER YOUTH APPRENTICESHIP

Although many state staff are aware of the youth apprenticeship initiative in each of the demonstration states, the actual amount of staff time devoted to administration of the initiative is remarkably low, rarely exceeding 2.0 full-time employees (FTEs) in any state. States that provide technical assistance and training services to local sites typically do not devote more than 3.0 FTEs to those efforts. Within these constraints, states have adopted a variety of staffing arrangements, including the use of consultants and staff shared across agencies.

Staff play a significant role in promoting the initiative in a number of states, notably in California, Maine, Pennsylvania, West Virginia, and Wisconsin. Maine uses staff of its Center for Youth Apprenticeship to guide program development. Staff actively participate in local site

development, employer recruitment, and curriculum development. The Center even provided teachers on a one-year temporary basis to accommodate the enrollment of clusters of high-school students.

A dramatic example of the impact that state staff can have on the implementation of youth apprenticeship occurred in Pennsylvania, where the responsibility for the program moved through three state agencies as the key staff person changed job assignments. The state director and staff worked out of a local Industrial Resource Center but reported to the state.

In West Virginia, the Department of Education representative on the Joint Apprenticeship and Training Advisory Committee and the state representative of the federal DOL Bureau of Apprenticeship and Training are entrepreneurial individuals. These people saw that the active collaboration of their two operations could produce important opportunities for young people and in so doing benefit their core programs. More than any other role, state staff in West Virginia seem currently to be acting in the capacity of salespeople. They are energetically trying to sell both educators and employers on registered youth apprenticeship. Their sales task involves identifying new contacts, as well as finding ways to resolve problems as they arise.

Several states use consultants to help facilitate implementation of some aspects of the program. California is probably the most significant example. It staffs the day-to-day management of its project with consultants. Most committee members view the consultants as neutral, despite their long-term ties to key personnel within the state department of education; and the consultants have good connections to key business leaders and the academic establishment in the state.

In several states, personal relationships across state agencies play a positive role in implementation. In California, key staff in both the departments of labor and education formed bridges between their departments and the community college system. Similarly, friendships among key education and labor staff in Wisconsin have greatly facilitated cooperation and problem solving at the state and local level. In many states, however, old animosities and suspicions die hard. On a day-to-day basis in several states and local sites, the span between agencies has been harder to fill. Fledgling state-level

cooperation has not yet filtered down through the respective systems in most areas, and working relationships that have been created across agencies in some local sites have not risen up to the state level.

In a few states, regional or local staff affiliated with the state are facilitating program development. In Oregon, seven regional apprenticeship offices act as liaisons between the state Bureau of Labor and Industries and local apprenticeship committees. However, these coordinators each serve many different trade committees for registered apprenticeship, leaving them little time for youth apprenticeship. In Pennsylvania, state-supported Industrial Resource Centers each have a staff member whose time is solely devoted to the youth apprenticeship program. These Youth Apprenticeship Project Managers market the program to employers and monitor program operations, troubleshoot on site to solve problems and ensure employer satisfaction with the program, and work closely with school personnel.

As we have indicated, states have devoted considerable effort to creating mechanisms to build partnerships and foster collaboration across state agencies and between the public and private sectors. With a few exceptions, in most states the working relationship between cabinet and subcabinet officials has been strengthened by these efforts. In addition, staff in many key state agencies are forging close working relationships, and this is facilitating pilot site and systems development efforts. In general, however, these efforts have not spread widely across state agencies, nor filtered down to the community level. Most cross-agency relationships and public-private collaborations at the local level have come about as the result of personal relationships and locally initiated consensus-building efforts.

The public-private partnership, although generally limited to a few employers and unions, is benefiting from state efforts at consensus building. Advisory committees not only provide important forums for working out public sector differences and perceptions, but they also provide similar opportunities for employers and labor representatives. Where employers and labor representatives are given key roles, they sometimes make important contributions and even join forces at times to move educators and government representatives along.

STATE ACTIONS TO CREATE SCHOOL-TO-WORK SYSTEMS INVOLVING YOUTH APPRENTICESHIP

In planning and implementing their school-to-work initiatives, the eight states are pursuing similar activities, although their approaches and emphases differ, depending on political and financial realities within the state. In most cases, states say they are endeavoring to create new school-to-work transition systems, as opposed to instituting programs; and they are undertaking some activities designed to promote systemic change.

APPROACHES TO PROMOTING THE DEVELOPMENT OF LOCAL SITES

The eight states are playing a variety of roles in local site development. Several states have issued RFPs to identify promising sites; others rely on personal contacts, employer interest, or referrals. Four states make funds available to local sites for program development. Michigan put most of its DOL grant funds into competitive challenge grants to develop, implement, or expand local youth apprenticeship initiatives; grants to local sites averaged \$15,000 each. California makes small grants to its pilots of \$10,000 to \$20,000 each. Iowa's planning grants are about \$10,000 each. Pennsylvania awarded three-year grants for \$90,000 each to cover the initial cost of teacher training, the organization of consortia, the development of standards, curriculum development, salaries and fringe benefits, and supplies and materials. These grants require a local dollar-for-dollar match. Under each grant in the Pennsylvania program, the local site receives \$40,000 in the first year, \$30,000 in the second year, and \$20,000 the third year. West Virginia and Wisconsin have provided technical support but no direct funding to local sites.

States differ in their policies on how much money should be given directly to local sites. Some states believe that, because the long-term goal is to incorporate youth apprenticeship into an ongoing school-to-work transition system with substantial private sector support, every effort should be made to absorb costs at the local level. In these states, most resources are being devoted to efforts that states believe will enhance broad-based systemic change, including curriculum development, mar-

keting, consensus building, standards development, professional development, and labor market and career information improvement. Other states believe that start-up costs for youth apprenticeship are high and that local sites will need additional funds to cover these start-up costs, including extra compensation for teachers and school staff, student transportation, and the development of local materials. Pennsylvania has been able to provide both types of support and believes that both kinds of activity are needed if programs are to expand systemwide.

Guidelines for Local Site Development. All eight states developed guidelines for local site development. As might be expected, Oregon and West Virginia, states where youth apprenticeship is closely related to registered apprenticeship, have the most specific guidelines. In these states, however, the guidelines primarily apply to individual apprentices at specific work sites and not to the school-based portion of the student's experience. Pennsylvania and Wisconsin also have specific guidelines for local programs. Wisconsin is moving toward a policy of requiring a local program to be certified as meeting the state's guidelines before being accepted as a youth apprenticeship site.

In reality, these states, along with most other grantees and local sites, are working to put in place a few key components of the model and add other components over time. Thus, at one California site, the program first enlisted mentors for 11th graders and began developing a work-site curriculum; then it placed 11th graders in paid summer internships where the curriculum was used for the first time. In Wisconsin, because key employers in two sites were eager to begin programs, students were already being trained at the work site while the academic and work-site curricula were being developed.

In most states and localities, programs have not started from scratch. Many sites already have some applied academic materials available in some subjects, and vocational educators already have technical materials for classroom use. At the same time, however, youth apprenticeship requires far more developmental efforts than most state officials, school administrators, employers, and teachers anticipate. Thus, program development has usually taken longer than planned and has progressed

more incrementally, requiring much greater investments of time and more innovation than most stakeholders originally anticipated.

State Influence Over Local Sites. States have varying degrees of influence over local site development. In the states in the study sample with the most influence, staff take an active role in recruiting schools and employers, provide assistance on curriculum development and other program design issues, promote networking across sites, and troubleshoot cross-agency problems and other issues as they arise. In these states, staff are seen as resources who can respond quickly and effectively to requests for technical assistance and information. State influence over local program development also appears to depend to an extent on the degree to which state goals mesh with local values and the interests of local stakeholders. To date, the existence of state legislation and regulations seems less important than the developmental assistance and funding provided by the state, the federal government, local government, and other sources. Based on interviews with local project directors, it is clear that hands-on technical assistance to sites adapted to meet their needs, networking across sites, troubleshooting to deal with cross-agency problems, and the development of systemic tools, such as curricula, standards, and useful labor market information, are highly valued by most local sites.

SUPPORT FOR TECHNICAL ASSISTANCE, NETWORKING, AND STAFF DEVELOPMENT

To date, states are pursuing technical assistance, networking, and staff development primarily through conferences, personal contacts, and hiring of outside technical assistance experts. In Maine, Center for Youth Apprenticeship staff are providing a variety of technical assistance services to local sites, including facilitating planning meetings, training workplace masters and curriculum coordinators, and identifying potential employers. The Center developed an implementation manual that explains the Maine model and describes the roles and requirements of employers, students, and schools. The Center is also developing a "Tool Box" that includes shell documents for schools that want to establish programs. A handbook for curriculum coordinators and

workplace masters is available and will be used as a training device for new demonstration sites.

Several states are relying on outside groups to assist them in providing technical assistance to local sites. Iowa contracted with JFF to coordinate a technical assistance conference for its Work Start grantees in the summer of 1993. Pennsylvania, which is an active technical assistance provider, used its CCSSO grant to hold a series of informational conferences around the state. The state also provided a week-long workshop for new sites on all aspects of program implementation and a summer training program for teachers on using a youth apprenticeship curriculum. West Virginia held a series of training sessions for educators, employers, and others potentially involved in registered youth apprenticeship to raise awareness and to lower anxiety about the initiative. West Virginia also developed an extensive series of pamphlets, brochures, and guides for counselors, co-op teachers, and vocational education staff. The series includes a specialized manual for co-op coordinators, with tailored forms for working with registered-apprenticeship staff and employers, suggested guidelines for employer-based training, and information about labor laws and occupational safety. Pilot sites in some of the eight states are in the JFF network of selected youth apprenticeship sites, and in some cases their staff attend JFF's summer training institutes.

Several states sponsor training for school and employer staffs, who are directly involved in operating youth apprenticeship programs. For example, Oregon is sponsoring a summer internship program for vocational teachers. California and Wisconsin are sponsoring in-state teacher workshops. In California, academic and vocational teachers from a printing project will attend a training session at the Graphic Arts Institute in San Francisco, while personnel from health sites will participate in training designed to improve the quality of instruction in their programs. Wisconsin will soon begin using peer-to-peer technical assistance across sites.

Local sites and employers say they value well-conceived technical assistance adapted to meet their needs. Conferences and meetings are useful for marketing and general information sharing. However, local sites appear to want much more specific and customized assistance to deal with the nitty-gritty problems of program adminis-

tration, operation, and development. They desire opportunities to discuss practical problems with peers in other sites and states. They also appreciate help in cutting through red tape and getting quick, accurate responses to their questions.

PROMOTION OF EMPLOYER INVOLVEMENT

States are generally playing three roles in promoting employer involvement: (1) identifying target industries, (2) marketing and recruitment, and (3) providing incentives and technical assistance to encourage participation.

Identifying Target Industries. A few of the eight states targeted specific industries based on labor market and occupational projections. For example, Wisconsin and California targeted the printing industry because of its growth potential in those states. Pennsylvania chose metalworking for similar reasons. Five of the states are developing health-related programs. In Wisconsin, state staff examine labor-market information and contact representatives of promising industries. Wisconsin has set criteria for participating industries—they must be stable or growing and must provide career-ladder opportunities; other criteria involve wage scales, numbers of employees, geographic distribution within the state, and the capacity to provide sufficient youth apprenticeship slots. Oregon, Michigan, and West Virginia preferred to let local sites identify private-sector partners.

A key advantage to targeting key industries is that the process of target selection provides a focal point for (1) recruitment of employers and industry associations and (2) the development of curriculum, assessment, and standards that can be used across the state. In practice, however, employers tend to become youth apprenticeship partners based on their level of interest, economic conditions, and other factors that are locally driven.

Employer Recruitment. A few states are playing a role in employer recruitment on a statewide basis, and several are performing important functions in initiating employer participation in local pilots. In Maine and Wisconsin, some potential employers are personally recruited by the governor and top members of the cabinet. These states included key employers and union officials on study tours to Europe and hosted special events to solicit their

support. In these states attention is usually focused on large employers or dominant industries. The investments have paid off; in both states, employers targeted for attention have pioneered youth apprenticeship programs and have become enthusiastic supporters of the initiative.

In several states, staff spend considerable time nurturing employer participation in local sites. In California, major employers who commit to local site development are invited to sit on the statewide steering committee as representatives for their sites. Staff place a great deal of emphasis on working with promising employers, serving as intermediaries between employers and schools, and generally encouraging employers to take a significant role in local site development. Employers were featured prominently at the statewide conference in the spring of 1993, and a significant number of employers attended the event.

Although West Virginia is building on the registered-apprenticeship model, staff decided to work with all employers, whether or not they are already registered training agents. To that end, West Virginia staff participated in a local television cable talk show on youth apprenticeship that has been rebroadcast regularly throughout the state. In Wisconsin, once an industry is selected by the Youth Apprenticeship Advisory Committee for targeting, an implementation panel of key stakeholders suggests how to market to employers and labor in that industry and then monitors sites once they are developed.

A number of states developed informational brochures specifically targeted on employers. Oregon produced a set of questions and answers focusing on employer concerns; state staff speak at Chamber of Commerce and other employer-sponsored events, as well as conferences of labor associations, to explain the initiative and encourage participation.

It appears that employer associations are not yet heavily involved in youth apprenticeship in most states. However, Wisconsin and California are working closely with national and local affiliates to develop program materials. The Printing Industry Association and its local affiliates have played key roles in both states. Wisconsin has also used industry associations as a primary vehicle to develop and market its initiative, and the governor and state leaders have worked to secure their support

through numerous presentations. The Wisconsin Bankers Association, the Credit Union Association, and the Institute for Financial Education participate on a finance implementation panel that meets regularly to foster program development. The American Institute of Banking's curricula materials are available to local educators, and the Wisconsin Bankers Association is contributing funds for project development.

Use of Financial Incentives and Organizational Support. Some states have proposed financial incentives to encourage employer participation, but few have been able to implement these proposals. Several states are relying on organizational support to secure and sustain business involvement.

Maine's governor originally hoped to give participating businesses a 50-percent tax credit for dollars expended on each youth apprentice, capped at \$1,000—but the state legislature did not approve his request. Oregon's initial youth apprenticeship legislation authorized a dollar-for-dollar tax credit to employers for wages paid to participating students, up to \$2,500 per apprentice for the first year. The employer tax credit was intended as an incentive to attract employers into the youth apprenticeship program; but some state and local officials thought that, given the cost of an average registered-apprenticeship placement, the proposed credit would not be large enough to function as an incentive. Oregon recently passed new legislation that replaces the tax credit to employers. Under the new legislation, subject to fund availability, employers who join the program after January 1994 may either receive reimbursement for 50 percent of their actual costs, not to exceed \$2,500 per student, or education service credits to purchase training for adult workers from public institutions or private entities approved by the state department of education. Wisconsin has proposed spending almost \$1 million to provide employers with grants to offset a portion of their costs for supervision and training of youth apprentices. Sites in a few states are using JTPA funds to support the wages of participating students; however, sites appear to use these monies not so much as an incentive to business but rather as a way of expanding the number of students that employers can take on.

Pennsylvania and Maine are using organizational

tools to encourage employer involvement. Maine has created a 501(c)(3) nonprofit organization to provide payroll and insurance functions for youth apprentices in participating firms. Realizing that Maine's workers' compensation rates could become a barrier to employer participation, its Center for Youth Apprenticeship provides payroll and insurance functions for apprentices; employers pay the Center a fee of about \$5,200 per apprentice to participate in the program, which covers salary and related expenses and a processing cost.

States have adopted different philosophies about how best to engage employers in youth apprenticeship. Because there are so few employers participating in any one site to date and because financial incentive schemes have yet to be fully funded, it is difficult to make judgments about which approach works best in which circumstances. Employers themselves seem split over the issue when questioned at participating sites. Some strongly support tax credits and other reimbursements to offset the cost of participation; others say they believe it is important for employers to incur the expense as part of an investment in a quality work force and to ensure that they have a real stake in the program.

MARKETING TO EDUCATORS, PARENTS, AND STUDENTS

In Maine, the governor and the Commissioner of Education have actively participated in recruiting schools. The commissioner sent a letter to all school superintendents urging their involvement, and the governor held a statewide awareness session for school personnel. The governor has also hosted meetings for education leaders in the state. Center staff have made presentations at numerous state and regional education conferences, as well as at individual school board meetings; and they have met with individual school personnel. The Center publishes a quarterly newsletter and has created handouts about the program, including both general information and materials directed at specific audiences such as parents, educators, and business personnel. In addition, the Center has developed a brochure about work-based learning and Maine's career pathways. Oregon also prepared brochures aimed at students and educators. Both Pennsylvania and West Virginia have held regional conferences to build interest among educators and others.

EQUITY ISSUES IN YOUTH APPRENTICESHIP

Several states have set equity goals, but few have as yet undertaken aggressive activities to promote gender or racial equity. Breaking down gender barriers was identified by several states as an area needing special attention. Michigan is working with a private nonprofit organization, the Marquette Women's Center in Michigan's Upper Peninsula, to increase the participation and awareness of young women regarding alternative career choices. The executive director of the Center is a member of the state's strategic planning work group, and one of Michigan's local sites has already agreed to incorporate the Center's material into its new youth apprenticeship program. In Wisconsin, the state requires local sites to complete an application that requires a description of the steps local projects will take to ensure that women, minorities, and disabled students are actively recruited and enrolled in the program; because of the ethnic distribution in the state, state staff are trying to expand the initiative to major cities to increase the number of minorities who are youth apprentices.

In California, the state is focusing its initiative on career academies. The academies not only serve a substantial number of at-risk youth; they also actively engage significant numbers of female and minority students in a variety of occupational offerings. In one printing industry pilot, about 40 percent of the participants are female. In a building trades site, a woman carpenter has volunteered to work with the program, which has set a goal of attracting 25 percent female participants.

Although equity issues are important to state officials, most states have put equity on their "B" list of issues to resolve once key components of the pilots are in place.

IDENTIFYING AND PROVIDING FINANCIAL RESOURCES

Only a few states—Wisconsin, Oregon, Maine, and Pennsylvania—are investing significant state funds in youth apprenticeship. At the request of the governor, the Maine legislature appropriated \$750,000 for 1994. In Oregon, the state has authorized spending \$1.1 million on work-based learning and youth apprenticeship.

The Pennsylvania legislature has made a commitment to expand youth apprenticeship and appropriated \$500,000 in 1993, to be followed by a \$1 million appro-

priation in 1994. Almost all of these monies will be used for start-up grants to local sites. Several local Pennsylvania sites are concerned, however, about how they will fund their programs once their three-year start-up grants have expired. In many Pennsylvania sites, the initiative is run out of the Area Vocational Technical Schools (AVTSs), whose funding comes from local school districts and is based on the number of students each district sends to the AVTS. For those AVTSs that are shared-time vocational schools, students normally receive their academic instruction at their home school, and the school district retains fund for this purpose. Because youth apprenticeship requires the student's academic subjects to be integrated into work-site learning, the shared-time AVTSs must provide those courses along with the work-related instruction. The shared-time schools are currently paying for this academic instruction out of state and federal grant dollars. Staff members at these schools say that loss of the additional revenue will pose particular hardships for these schools—and special problems in rural areas where this type of arrangement predominates.

Most states are using grants, federal dollars, and in-kind funding to support their efforts. In Maine, the private sector is helping to support statewide development through participation in leadership activities and in-kind contributions. In Wisconsin, the Wisconsin Bankers Association has allocated \$11,000 to support curriculum development for financial careers.

Financial conditions play a significant role in the ability of states to add their own resources to youth apprenticeship initiatives. California and Oregon have both faced significant resource deficits in the past few years. In contrast, Wisconsin has had a budget surplus and thus has had more latitude to use state funds to support its initiative.

Perkins Act and JTPA monies seem to be the federal funds most often used to support state activities. For example, Perkins funds are being used to support the development of curricula, standards, and assessment tools in California and Wisconsin. In Michigan, the State Board of Education voted to fund five additional challenge grants from vocational education funds. Based on local decisions, JTPA funds are being used to supplement wages of some students in California and Michigan. A

number of states are using or planning to use JTPA 8-percent funds to help support development and implementation of their youth apprenticeship initiatives. Maine has used \$100,000 of JTPA dollars, a similar amount of Perkins Act funds, and \$10,000 from the Maine Occupational Information Coordinating Committee for program development and administration.

Though new resources are required to start up and support the infrastructure of youth apprenticeship, it appears that few states will be in a position to use state funds to promote the development of new sites and provide technical assistance. In Maine, school district administrators believe funding should come from the state or national level, because it is too expensive to fund at the local level. However, they do not want youth apprenticeship funds tied to the state education budget; rather, they suggest it be funded through the state labor department. Maine administrators said that they will need additional funds to develop new sites, provide technical assistance, and compensate school districts for teacher release time, so that they can develop curriculum that integrates with job placements. Iowa also sees a need to provide funds for release time for teachers to plan and develop programs and indicated that assistance in establishing job shadowing programs for teachers in related Work Start industries during the summer is also needed.

EVALUATION

A few states have retained independent evaluators, primarily to document what is occurring in their programs and to help develop appropriate outcome data to document their progress. Iowa's work plan lists project evaluation as a grant objective. Oregon is considering development of a recordkeeping system to document program effects, such as lower dropout rates and higher rates of employment.

West Virginia has contracted with the Appalachia Educational Laboratory to conduct an evaluation of the instructional materials prepared for the program. The Lab's suggestions, along with the results of field tests of the materials, have already resulted in a series of revisions to them. To understand how local pilot sites respond to the youth apprenticeship opportunity, the

evaluator will collect curriculum outlines and vocational curriculum information from the pilot schools, conduct focus-group sessions with pilot schools, and document enrollment of students in apprenticeship versus other vocational and academic programs.

In Wisconsin, a portion of a U.S. Department of Education grant will be used to cover the costs of an outside evaluation to record the experiences of students graduating in 1994 and 1995. A grant from the state-funded California Policy Seminar is supporting an evaluation that will describe and analyze that state's pilot programs in the context of statewide policy issues. The evaluation will also analyze 1980 and 1990 Census data to determine who hires new high school graduates in California, to provide information on prospective industries on which to target youth apprenticeship initiatives.

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As this chapter shows, the demonstration states are willing engines of systemic reform on behalf of youth apprenticeship. At the same time, as we indicate in the next chapter, many states have related reform activities underway in elementary and secondary education. Though these two major efforts are in most respects complementary, states are finding that they must make adaptations to both systems to facilitate their coordination and integration. Also, in instances where education reform activities are not well established, youth apprenticeship and related initiatives are driving reforms in existing educational programs.

State and local leaders in California, Maine, Michigan, Oregon, Pennsylvania, and Wisconsin traveled to Europe to study youth apprenticeship.

CDF International is a New York-based organization with strong ties to technical trainers in Germany and elsewhere in Europe.

The enactment of Senate Bill 81 in August 1993 is the only state activity reported here that occurred after June 1993. It is noted because it represented a fundamental shift in Oregon's policy regarding youth apprenticeship and school-to-work transition.

This chapter examines state issues in the relationship of schooling and school-to-work transition, especially youth apprenticeship. In particular, we review: (1) the state education reform environments in which youth apprenticeship is being implemented; (2) issues in standards, curriculum, and instruction; (3) the relationship of youth apprenticeship to other secondary school programs; (4) the relationship to postsecondary education; (5) the development of guidance and information systems for youth apprenticeship; and (6) other related educational issues. We conclude with a few early observations on educational outcomes of current efforts to develop state systems of youth apprenticeship.

EDUCATION REFORM ENVIRONMENTS IN THE STATES

Whether people primarily view youth apprenticeship and related transition activities as a facet of education reform or as a component of economic development, educators at state and local levels are introducing these approaches in arenas where other reform initiatives are already underway. The broader education reform contexts range from the comprehensive (e.g., long-term, state-mandated reform in California) to the specific (e.g., the West Virginia state superintendent's interest in establishing "educational warranties" for the state's high school graduates).

A central fact in this stew of reform activity is that traditions of educational governance in the states shape their approaches to education change. In California, for example, the state exerts control over policies involving curriculum, instruction, textbooks, and student assessment. States such as Michigan, Maine, and Iowa, where education policy is largely a local matter, represent the opposite end of the continuum. Wisconsin, Oregon, Pennsylvania, and West Virginia fall somewhere in the middle. It is no accident, then, that the individual state designs for developing and implementing a school-to-work initiative are quite different, because states typically will select an approach that is consistent with familiar operating procedures. Where inconsistencies occur, as in California, good reasons generally exist—such as California's current poor economic climate.

OVERARCHING STATE REFORM PLANS

Several states with youth apprenticeship initiatives have adopted overarching blueprints for educational reform, either for the whole system (K-12) or specifically for secondary education. A cross-cutting theme in several of these plans is the dismantling of the "general" track in high schools. Considerable research has demonstrated that the low levels of academic rigor and the lack of post-high school focus in the general track leave students stranded; they are prepared for neither postsecondary education and training nor the workplace. The reform plans of four of the eight demonstration states address this problem.

California. For a decade or more, California has engaged in an almost constant process of reforming its education system. In the past five years, the thrust of reform-oriented proposals, reports, and actual legislation for secondary schools has increasingly focused on preparing high school graduates so that they may develop the skills and self-direction to proceed to the next stage of their lives, whatever that might be. The current blueprint for change, *Second to None* (California High School Task Force, 1992), specifies several key elements:

1. A 9th and 10th grade core curriculum for all students.
2. Selection of a career or academic program major field around which a student's 11th and 12th grade program is organized.
3. Development of academic and technical standards and assessment systems that emphasize performance and application of knowledge.
4. Attention to the creation of personalized and supportive learning environments.

In addition, Senate Bill 662 in 1991 mandated development of a 10th grade performance-based assessment for all students to measure both academic and workplace skills. (The California Business Roundtable recommended many of the key elements of the current state blueprint in a 1988 report, *Restructuring California Education*. At the time, the recommendations were summarily rejected.) The California Youth Apprenticeship Project is closely linked to implementation of *Second to None* goals.

Maine. The state's broadly based agenda for educational reform is titled *Maine's Challenge*. At present, the written version of this plan is still in draft form. Legislation implementing the agenda has been written but not introduced because of the state's budget problems. Some portions of the draft legislation were incorporated into a legislative resolve (not an act) in support of the Maine Youth Apprenticeship Program. Core programmatic components of the reform plan that relate to the K-12 education system include:

1. Transformation of K-10 education to achieve student-centered, individualized, self-paced, and competency-based education, culminating in a Certificate of Core Mastery at about age 16.
2. Replacement of the general track in grades 11 and 12 with a broad spectrum of structured pathways into the world of work, including entry into post-secondary education.

Other programmatic components cover continuing adult education and training and economic development strategies. Maine has also adopted the national education goals as *Maine 2000*. The youth apprenticeship program is specifically cited as one means of helping the state reach its goal of a 90-percent high school graduation rate by the year 2000.

Oregon. In 1991, this state passed much-publicized reform legislation—the Oregon Educational Act for the 21st Century—that was based on the recommendations in the report of the Commission on the Skills of the American Workforce (1990). At the secondary school level, the primary goal of this reform legislation is to raise expectations for all high school students by establishing two standards-based benchmarks:

1. The certificate of initial mastery, which most students would earn at about age 16 (grade 10).
2. The certificate of advanced mastery, which replaces the high school diploma.

During their last two years of high school, students would be enrolled in either college preparatory or professional-technical courses combined with on-the-job train-

ing. Provisions of the reform are not scheduled to take effect until 1996-97, allowing a five-year planning and development period. In 1991, the legislature also approved the Oregon Youth Apprenticeship Training Program as a pilot for a technical/occupational option that students might select after completing the certificate of initial mastery; the program is directly connected to the registered-apprenticeship system. Legislation in 1993 created the additional work-based learning initiative described in Chapter 2. Progress toward implementation of Oregon's vision for educational reform has been stymied by a school funding crisis resulting from a cap on property taxes.

Wisconsin. In 1991, Wisconsin enacted State Act 39, the School-to-Work Transition Initiative. In addition to officially establishing the state's youth apprenticeship program, the Act mandates:

1. The development of a new student assessment program, including a gateway examination for all 10th graders.
2. A Tech Prep curriculum in every high school.
3. Advanced placement credit at technical colleges for certain courses studied in high school.
4. Funding for advanced technology centers in the technical college system.

The gateway assessment will be multidisciplinary and will cover core academic areas such as reading, writing, mathematics, and scientific literacy. The state is also developing a performance-based Wisconsin Student Assessment System for measuring students' academic mastery at grades 4 and 8.

In these four states, the planned or pilot youth apprenticeship initiatives mesh directly with much larger blueprints for reform. There is considerable similarity among the four in their conviction that something important needs to happen at about 10th grade to ensure that students will leave high school with a plan in mind and the knowledge and skills to pursue it. As a program primarily designed for students in grades 11, 12, and (sometimes) 13, youth apprenticeship fits neatly into the options that states can make available to help students explore and then focus on an area of interest.

OTHER STATE LINKS TO EDUCATION REFORM

In the other four states where youth apprenticeship initiatives are under development, broad-based, state-led educational reform has not received the same prominence. Michigan has developed outcomes for a model core curriculum for all students; and Public Act 25, which is essentially an accountability statute, requires local districts to develop curriculum and instruction that will allow students to achieve those outcomes. However, because of a state constitutional amendment that requires the state to pay for any mandated programs, Public Act 25 and other state policies aimed at reform have little real clout. Nevertheless, Michigan—and also West Virginia—envision and are taking steps to design and implement fully articulated transition-to-work systems of education and training that are similar to the written policies of California, Maine, Oregon, and Wisconsin.

Some of the demonstration states are involved with national reform projects related to the improvement of academic instruction. Systemic reform is the term used to refer to one of the most important current reform strategies over the past decade. Described by Smith and O'Day (in Fuhrman & Malen, 1991), the strategy relies on strong state leadership in developing or promoting alignment among curriculum, instruction, assessment, and desired student outcomes. As piloted in California, this strategy has been incorporated into the National Science Foundation's State Systemic Initiative for reforming math and science education in 25 states (including California, Maine, and Michigan). The administration's draft legislation, *Goals 2000*, also builds in the Smith-O'Day definition of systemic reform.

In California, Maine, and Michigan, the evaluation team probed for information about linkages between those states' systemic reform of math and science and the development of youth apprenticeship systems. Virtually no evidence was obtained in those states to indicate meaningful communication between systemic reform of academics and development of school-to-work systems.

Creating better coordination among federally funded reform efforts is an area where there is great need for improvement. Because the youth apprenticeship initiatives are tending to focus on occupations where a real

career path will require relatively high levels of math and science competence and because learning theorists have underscored the value of hands-on instructional strategies within the context of systemic reform, there seem to be logical and compelling reasons for a close working relationship between these different reform efforts. As they develop, youth apprenticeship (and other transition-to-work pathways such as Tech Prep) offer natural laboratories for evaluating the appropriateness of academic standards in the real world and applied learning settings.

ISSUES IN STANDARDS, CURRICULUM, AND INSTRUCTION

ISSUES IN DEVELOPING STANDARDS

In varying ways, all eight states with youth apprenticeship initiatives are concerned with setting student performance standards that are high enough to achieve credibility and portability in both the workplace and higher education. The concept of standards is a slippery one, however, and can easily degenerate into mere rhetoric. For the youth apprenticeship initiatives, the situation is further complicated because standards may refer to work-readiness standards, industry skill standards, academic performance standards, or all three. Both DOL and the U.S. Department of Education (ED) are currently funding projects to develop skill standards for several key industries. However, these projects are operating on a parallel track with the youth apprenticeship initiatives, and there appears to be little contact between the standard-setting projects and the youth apprenticeship demonstrations. The closest connections seem to be among:

1. A project at the Far West Laboratory in San Francisco to develop standards for the health industry.
2. California's intention to incorporate apprenticeship opportunities into its health academies.
3. A California effort to develop voluntary industry standards in the areas of communications, banking/finance, health, printing, and electronics.

All three of these initiatives enjoy the support and participation of key business leaders and consultants

who are also involved with youth apprenticeship.

Several of the states are participating in the New Standards project, a combined effort of the Center for Education and the Economy and the Learning Research and Development Center at the University of Pittsburgh. New Standards is a national effort to develop a pool of rigorous, performance-based assessment tasks capable of measuring not only what students know but also what they are able to do in grades 4, 8, and 12. Although the New Standards focus is on academic content areas, the idea of performance measures is compatible with assessing what someone can do in an applied context such as a vocational shop or in the workplace. Iowa and Wisconsin are also participating in a standard-setting project called Work Keys, which is sponsored by the American College Testing Service, the American Association of Community Colleges, and other partners. The Work Keys System is designed for use in secondary schools, community college, and "second chance" programs for school dropouts. The system includes assessment instruments that can be used evaluatively (e.g., by an employer or a teacher) or diagnostically (by a teacher or a student). Assessment tasks are performance based and criterion referenced; standards can be tailored to fit the requirements of specific jobs.

The most common standards being applied to youth apprenticeships are those already established by the DOL Bureau of Apprenticeship and Training. As the next chapter discusses in more detail, these standards for more than 800 specific positions are readily available and adaptable to fit the circumstances of beginning apprentices who are also still in school. However, these standards are essentially time based—a set number of hours of training eventually yield a journeyperson status—in a way that is incompatible with current education reform initiatives, such as New Standards and the reform agendas of many states. For example, although Oregon is currently relying on DOL apprenticeship standards to some extent, when its Certificate of Advanced Mastery is fully developed, the standards that the latter credential represent may be seen as a more appropriate reflection of the outcomes the youth apprentice is expected to achieve. In West Virginia, the state legislature has mandated the development of academic and vocational competencies and proficiency exams, which are currently

being drafted. The youth apprenticeship initiative will link with these efforts to develop skill standards, but also will make use of the standards already developed through the adult apprenticeship program.

Wisconsin and Maine are explicitly not using DOL apprenticeship standards, although for different reasons. In Wisconsin, the standards for registered apprenticeships are, to some extent, determined locally. Thus, an apprentice diemaker in Milwaukee may be held to a different standard from one in Green Bay. The leadership behind the youth apprenticeship initiative is determined that the new program should represent a system, with standards that are uniform throughout the state; it is therefore steering clear of DOL apprenticeship standards and looking to the German apprenticeship system for guidance in establishing performance standards. Maine has given responsibility for developing youth apprenticeship standards in traditional fields to the state's craft committees, subject to review and approval by the Center for Youth Apprenticeship's advisory body. In fields where apprenticeship has no history (such as medical claims processor, health information clerk, or account representative), craft committee members (which include union representatives) and Center staff have worked with masters from the various work sites to develop position descriptors that are essentially lists of the skills needed to do the jobs well.

Although states are investing in skill-standards development, most share the views of Pennsylvania state officials, who stress the need for federal assistance in this area. In general, local sites are asking for more guidance from the states, and states are asking for more help from the federal government.

CURRICULUM AND INSTRUCTION ISSUES

By definition, the youth apprenticeship initiatives must provide participants with academic instruction. In states where youth apprenticeship piggybacks on registered apprenticeship, program developers often adopt or adapt the "related instruction" requirements used for registered apprentices 18 and over. In other states, a curriculum development process is underway, usually on an industry-by-industry basis but sometimes placement-by-placement. Several states are also developing or plan to develop career education curricula for younger students

to help them and their families with decisions about programs to pursue in the last two years of high school.

In theory, development of a youth apprenticeship program offers states and local educators an opportunity to design creative new curricula that respond to the exhortation in the Perkins Act for more emphasis on integrating academic and vocational/technical subject matter. Depending on program design, (1) knowledge needed for the work site may be infused into school-based classrooms, shops, and labs; (2) knowledge from classrooms may be infused into the work site; or (3) knowledge flow may occur in both directions.

The desirability of an integrated curriculum and applied approaches to instruction has a credible research base. Cognitive scientist Lauren Resnick, director of the Learning Research and Development Center and a member of the DOL Secretary's Commission on Achieving Necessary Skills (SCANS), has noted the fundamental discontinuities between the traditional education provided in school and the knowledge or approaches to learning that are most useful in work and daily life. As examples, she cites the following (Resnick, 1987):

In school, learning and assessment of what has been learned are almost exclusively individual activities. Outside of school, however, most activity is socially shared and "success" is the result of group effort.

In school, the bottom line is what students are able to do unaided by external supports or tools (e.g., books, notes, calculators). In contrast, the use of tools is encouraged (or even required) in the workplace, in order to increase both efficiency and accuracy.

School learning is largely symbol-based and far removed from any connection to real objects, real events, or real problems. Research indicates that, in the real world, people routinely solve concrete problems easily and accurately, even though the same problems would stump them if presented as pencil and paper exercises.

The schools' mandate is and always has been to teach broadly applicable skills and theoretical principles that are presumed to be transferable.

However, evidence is accumulating that the skills learned in school have limited transportability to specific situations outside of school.

More recently, Berryman (1992) has used the findings of cognitive research to suggest that apprenticeship is an appropriate paradigm for helping educators and others to rethink our traditional but artificial and ultimately dysfunctional distinctions between head and hand, academic and vocational education, knowing and doing, abstract and applied, education and training, and school-based versus work-based learning. Collins, Brown, and Hollum (1991) even propose the idea of a "cognitive apprenticeship" as an appropriate metaphor for restructuring the teacher/learner instructional relationship to enhance development of higher-order thinking skills in classrooms where subject matter remains traditional.

Clearly, cognitive research indicates great possibilities for youth apprenticeship to improve student outcomes, tear down barriers between school and the real world, and generally introduce a ray of hope into the dismal portrait of American education that is so often painted. Given the way in which youth apprenticeship is developing in the eight states on which this report focuses, that hope is a heavy responsibility for youth apprenticeship to bear. Pressures to plan and implement pilot sites quickly have strained the capacity of many programs to approach curriculum development in a deliberate and thoughtful way. Further, in most of the states, curriculum development and adaptation are the responsibility of teachers or employers who must add this task to their already full-time workload.

The Pennsylvania Youth Apprenticeship Program is an exception to this generalization. With part of a large grant from DOL's local demonstration authority, Pennsylvania has supported release time for a group of academic and vocational teachers, working in collaboration with the Learning Research and Development Center, to develop curriculum units around workplace issues. These units have been made available to all pilot youth apprenticeship sites in the state. The job in Pennsylvania is made easier by the fact that the state's

program has targeted a single industry—metalworking, thus making the curriculum articulation task more manageable.

In Wisconsin, once the Youth Apprenticeship Advisory Council approves an industry, the committee creates an implementation panel composed of business, labor, secondary and postsecondary educators, and state officials to work on establishing the curriculum framework. Wisconsin's two pilot sites have targeted the printing industry and have been developing a curriculum on a semester-by-semester basis, in part relying on translations of the German curriculum for apprentices to the printing trade. It is not clear how or if academic and technical content is integrated, however. The state also is completing a banking and finance curriculum using materials developed by the American Institute of Banking and the Wisconsin Banking Association.

California is engaged in developing curricula, standards, and assessment tools for its six vocational education career majors. This effort is designed to make vocational skills more generic, increase the academic rigor of vocational programs, and build in generic employability and life skills. It is anticipated that the health curriculum being developed through this effort will be useful to youth apprenticeship and Tech Prep programs. In this instance and others, California plans to piggyback on its career academies. The academy model, pioneered in Philadelphia more than 20 years ago, is one of the most successful vehicles for creating a true integration of academic and vocational subject matter. At its best (as in the Oakland Health Academy), the model brings together a team of teachers working closely together over several years on a thematic, multidisciplinary curriculum.

A number of states are using applied academic curricula developed by the Center on Research and Development (CORD) and other national organizations, although this material does not cover all levels of every academic subject. Many sites are adapting these materials, customizing them to specific industries. In several states, local sites are developing their own work-based curricula.

Understanding the importance of curriculum to the success of its pilot youth apprenticeship venture, Maine appointed a Director of Research and Curriculum

Development as one of only two permanent professional positions within its Center for Youth Apprenticeship. However, the Director's responsibility in the curriculum area is to provide technical assistance and advice to local sites as they define appropriate school-based and work-site learning programs. The actual curriculum development work in Maine is the joint responsibility of designated staff from participating schools in cooperation with masters from the work sites.¹

In Michigan, curriculum and instruction issues are entirely a local prerogative. Many of the pilot sites in Michigan are relying on standards for registered apprenticeships as the curriculum core. Whether these standards include any academic competencies depends on the occupation. For example, related instruction that is part of the registered-apprenticeship requirements for the machine tool industry includes substantial coursework in mathematics. Related instruction for a baker's assistant, however, focuses on safety and health issues, even though a career path in the baking industry surely requires a good deal of facility with the mathematical skills of measuring and estimating. Industrial safety issues could be incorporated into a social studies class specially designed for students who spend some of their time in workplace learning. In fact, that is precisely the theme of one of the academic curriculum units developed for the youth apprenticeship program in Pennsylvania. In Michigan, however, because the academic program of a student in a preapprenticeship or school-to-apprenticeship program is likely to be based in a comprehensive home high school that sends students to a shared-time regional vocational center, academics are several steps removed from apprenticeship. This approach drastically reduces the opportunity for integration.

Five states—California, Maine, Oregon, West Virginia, and Wisconsin—plan career education curricula as an introduction to the world of work. In West Virginia, exposure to careers would begin in middle school, with opportunities for job shadowing in the 9th grade. Teachers at three sites in Oregon, with the assistance of an outside consultant, have prepared a high school career education course called Introduction to Youth Apprenticeships/School-to-Work Transition; the course, which will be a prerequisite for entry into youth apprenticeship, is currently being piloted. Wisconsin also

plans a prerequisite course in career awareness/exploration. Maine has a similar plan but has not yet begun to develop the curriculum materials. California has been using federal vocational/technical education dollars to revamp its career education program, with particular emphasis on integrating academic and vocational instruction and exposing younger students to all aspects of an industry before which they select a work experience program, such as youth apprenticeship or enrollment in a career academy.

Overall, the curriculum development efforts that are underway in conjunction with youth apprenticeship initiatives appear to be fragmented. Because so many of the states are relying on pilots to lead the way, planning and implementing exactly what the youth apprentices will be studying are occurring at the local level—and often just one step ahead of the next day's class. It is curriculum development on the fly, and there is probably considerable duplication of effort. However, duplication may be necessary and, in some sense, beneficial in fostering the real integration of academics in an applied context. The National Center for Research in Vocational Education has conducted considerable research on curricular integration and concludes that efforts will be most successful if adaptation and implementation of an integrated curriculum involve both academic and vocational teachers and administrators working together from the outset (Schmidt, Finch, & Faulkner, 1992). This process is unlikely to be neat and may involve many people working on related approaches simultaneously.

Though some local duplication of effort may be good, states can take steps to ensure that local sites are aware of and share the state vision for youth apprenticeship. One strategy is to create opportunities for teachers, administrators, and others from local sites to come together for networking and mutual assistance. The Southern Regional Education Board's Vocational Education Consortium serves this function for 300 sites in 19 states that are striving to integrate academic and vocational education to raise the achievement of career-bound students. Individual states (or networks of states within regions) could adopt a similar approach as youth apprenticeship pilot sites expand. State support for creating integrated curriculum frameworks that could guide local development and implementation of instructional

content would also help ensure some continuity in approach across a state.

YOUTH APPRENTICESHIP AND OTHER SECONDARY VOCATIONAL PROGRAMS

As noted, people in several of the demonstration states view the youth apprenticeship initiative as one of many pathways that students may take to the world beyond high school. Several of the states' plans give the impression of a rational and smoothly operating system of opportunities that will see all students through to personally satisfying and successful adult lives. Someday, that may be true. At present, even those states with the most advanced visions of a system are grappling with the problems of a set of largely uncoordinated programs—some new, some entrenched—and the attendant issues of turf, self-protection, misunderstanding, and competition for scarce resources.

The vocational education enterprise itself is undergoing real change. Even before youth apprenticeship was a glimmer in anyone's eye, the American vocational education enterprise was undergoing a shake-up and a spruce-up. The most recent reauthorization of the Perkins Act inserted "applied technology" in the middle of "vocational education" in the Act's title, indicating legislative intent to give the nation's vocational education system an overhaul. The vocational education community's professional organization, formerly the American Vocational Association (AVA), became the American Vocational-Technical Association. The availability of Perkins Act funds for development of Tech Prep programs, the act's strong encouragement to integrate academic and vocational subject matter, and a requirement for states to set standards for vocational programs sent additional signals about the need for change. In some of the states, the new youth apprenticeship initiatives are at least partially "owned" by the vocational education establishment and are considered part of the general facelift that vocational education needs. Elsewhere, vocational educators have been less involved.

In California, traditional vocational education is offered both in comprehensive high schools and through Regional Opportunity Programs/Centers (ROP/Cs). In

addition to shop or classroom-based vocational courses, unpaid workplace experiences and paid cooperative education are available to high school juniors and seniors through the ROP/Cs. Also, the state has supported the development of more than 60 career academies that operate within comprehensive high schools and offer a career-focused education to about 150 primarily at-risk students per site. The youth apprenticeship initiative in California is linked to these other parts of the system in various ways:

- Two of the pilot sites work closely with a ROP/C, and several are affiliated with academies.
- The state director of vocational education is a member of the Youth Apprenticeship Steering Committee.
- Youth apprenticeship project staff have professional ties to key state leaders and the staff of some academies.

In some cases, relationships to the traditional vocational program occur through cooperative education, a traditional component of vocational education in which student participants obtain supervised workplace experience. For example, in Oregon, the state department of education's Office of Professional/Technical Education has been involved in developing the career education course that will be a prerequisite for placement in an apprenticeship slot, but it has not had responsibility for developing placements or overall support for the program in the state. Even so, in two of the state's pilot youth apprenticeship schools, a cooperative education coordinator is taking the lead in monitoring the youth apprentices; and links between youth apprenticeship and vocational education are generally strong in these schools. West Virginia also has a strong cooperative education program with 85 local co-op coordinators who will serve as key resources in the development of youth apprenticeship. However, in the past the largest number of co-op training slots in West Virginia has been in retail sales, which is not a traditional field for apprenticeships. The state would like to create more parallelism between cooperative education and youth apprenticeship, so that the co-op experience can become a preparatory and exploratory experience for both students and employers

before a decision is made to embark on an apprenticeship.

In Michigan, although state vocational education officials are involved in the state-level discussions about development of youth apprenticeship and a school-to-work transition system, they do not have the lead role. Most of the state's youth apprenticeship pilot sites, however, are based in (1) intermediate school districts that deliver vocational education to students from several local districts or (2) vocational education consortia. In the Kalamazoo area, the city school system and eight suburban districts have combined resources to reform vocational education into a school-to-work transition system called Education for Employment. This initiative, which is nearly a decade old, offers participating students many workplace experiences, ranging from mentorship to internships and externships (preapprenticeship falls in this category) to community service credits; every high school has a Tech Prep program. In this case, the joint efforts of many people have turned many individual programs into much more than the sum of the discrete parts.

Despite these examples of links between youth apprenticeship and the more established vocational education system, there is also considerable distrust of the "new kid" among some vocational educators. One state-level vocational education manager asserted that there was already a system in place with employer contacts and high-quality programs; therefore, where is the need for a new program? Also, some disdain for vocational education exists among youth apprenticeship supporters. One state deliberately chose to house its youth apprenticeship program in the community college system to avoid the stigma associated with the traditional vocational education programs among parents, academic teachers, and counselors. In another state, the historical relationship between the state department of education and the separate governing board for vocational, technical, and adult education is so poor that the youth apprenticeship initiative has been placed in the state's labor agency. In a third state, a decision must shortly be made about where to permanently house the youth apprenticeship program. The options are in the chief state school officer's office, which is not equipped for day-to-day management of a program, or in the state

office of vocational and technical education, where some observers fear that youth apprenticeship's positive reputation will be tarnished by association. If tensions such as these escalate, then youth apprenticeship will likely be the loser because it is small, relatively unknown, and often highly dependent on the backing of an elected official who must run for office again.

Due to the availability of Perkins funds, Tech Prep programs are expanding in all the states. Because of similar purposes and strategies, there is a natural affinity between youth apprenticeship and Tech Prep's articulated classroom- and laboratory-based programs for students in grades 11-14. As someone has said, youth apprenticeship—with its strong emphasis on paid workplace experience—could be the third leg of an effective school-to-work transition program for students in the middle ranges of the achievement spectrum (adding the workplace to academic classrooms and technical shops or labs). The Pro-Tech program in Boston is an experiment in this direction for students interested in careers in the health industry. Similarly, in York, Pennsylvania, a program to prepare young people for careers in metal-working is a combined Tech Prep/youth apprenticeship program. (Both the Boston and York projects have received support as DOL-funded local youth apprenticeship demonstration sites.)

On the whole, however, in the eight youth apprenticeship states, relationships between Tech Prep and youth apprenticeship are weak—primarily because the two initiatives are not deliberately linked at a state policy level. As one observer in California noted, any convergence between Tech Prep and youth apprenticeship happens only if people at the state and local levels try to pull the streams together. This linkage has happened at Wisconsin's West Bend pilot site, where Tech Prep funds have been used to train teachers for the youth apprenticeship initiative. In Maine, the plan is for the state's regional Tech Prep coordinators to also be the regional youth apprenticeship coordinators. One potential problem with this plan is that the design of the fledgling Tech Prep programs has been a local and regional prerogative, whereas the designers of the youth apprenticeship program considered it to be a statewide model. Some observers in the state predict resistance to implementation of youth apprenticeship if local and regional plan-

ners are not allowed the freedom to adapt the youth apprenticeship model to their own circumstances.

When many initiatives are developing simultaneously in a state, the lack of communication can become a major barrier to effective coordination. In one state, organizers of a conference on Tech Prep were apparently unaware of the state's DOL-funded youth apprenticeship project and invited someone from outside the state to give an overview of youth apprenticeship. At a technical assistance conference in another state, local educators and employers appeared thoroughly confused about similarities and differences between Tech Prep and youth apprenticeship.

However, even where links between seemingly related programs are not strong, the indirect effects of knowing that there is a potentially competing effort around the corner can be beneficial. For example, in one state, broad discussion about the value of workplace learning in youth apprenticeship has prompted the leaders of some traditional vocational programs and Tech Prep programs to cast a critical eye on their own program designs.

YOUTH APPRENTICESHIP AND POSTSECONDARY EDUCATION PROGRAMS

Many of the youth apprenticeship initiatives are eager to make the case that participating high school students are not necessarily limiting their options for attending college. Indeed, several states include representatives of community college systems in school-to-work advisory groups and steering committees; in one state, the technical college system is the lead agency for youth apprenticeship. In general, however, the bureaucracies of higher education systems in the demonstration states tend to be barriers to the initiatives, not facilitators.

RELATIONSHIPS WITH TWO-YEAR INSTITUTIONS

To assuage the concerns of parents and students about closing off options, many youth apprenticeship initiatives promote themselves as an alternative route to technical or community college. They have thus come face to face early in the program development process

with the issues of college admissions requirements and transfer of credit.

The ease with which a school-to-work initiative can work out articulation agreements with the community or technical college system seems to be related to the relative complexity of the state education governance system. In Pennsylvania, for example, the state Secretary of Education is responsible for policies at elementary, secondary, and postsecondary levels of the system. This state is considering development of an Associate's Degree in Specialized Technology that would be awarded to both youth apprentices and Tech Prep participants at the end of grade 13 (in contrast to the usual community college Associate of Arts degree awarded at the end of grade 14 if a student proceeds straight through on a full-time basis). A policy decision of this type can be made and implemented in Pennsylvania without interminable discussion because the educational governance structure is relatively lean.

Contrast the Pennsylvania structure with that of California and Wisconsin, where every level of the K-16 system has its own state board of governors with a state bureaucracy to match. Moving the many parts of these systems in any uniform direction is a daunting task. One California community college policy barrier to articulation with youth apprenticeship initiatives is a requirement that transfer credits from high schools or ROP/Cs can be accepted only after a student successfully completes 12 hours of college credit following high school graduation. Nevertheless, at least one of the state's pilot sites has worked out an articulation arrangement with the local community college, and others continue to try.

In Wisconsin, Tech Prep and youth apprenticeship have bumped up against a teacher certification issue. The state has proposed to change the secondary school teacher certification code to allow high school teachers to teach courses for dual credit at both secondary and postsecondary levels. The technical college teachers' union objects to this change. Currently, one of the state's pilot youth apprenticeship sites has an assigned monitor from the technical college who oversees the quality of the technical courses offered at the high school. At the other Wisconsin pilot site, the youth apprentices attend academic and technical classes on the technical college campus. However, the overall issue in the state is by no

means resolved.

Maine's two-year technical college system has been directly involved in the promotion and design of the program, and the Center for Youth Apprenticeship is housed on one of the system's campuses. Participating students who complete the three-year program will receive a certificate (not a degree) and may then go directly to work or continue on to an Associate of Arts degree if they wish. Because Maine's technical college system is oversubscribed, automatic entry to the system through participation in the youth apprenticeship program may become an attractive recruitment feature as the program expands.

West Virginia offers a Tech Prep Associate Degree through its community college system. Continuing on for this degree after high school graduation is one of the options available to youth apprentices; students may transfer up to 43 of the 64 credits required for the degree from a combination of classroom and on-the-job training experiences.

In states that are building on the registered-apprenticeship system to develop youth apprenticeship, community and technical colleges are often also the venue for the "related instruction" classes required by apprenticeship agreements. These classes typically mingle youth apprentices with adult registered apprentices; the classes do not generally count for credit toward the Associate degree. Depending on the courses that youth apprentices have taken in high school, some employers may agree to accept high school credits in lieu of certain related instruction requirements. An observer in Oregon suggested that some accommodation would have to be made in that state's related instruction requirements to account for the fact that the youth apprentices are frequently much more computer literate than the adult apprentices enrolled in the same courses.

Finally, though whole systems are hard to move, much can often be accomplished through local relationships and good will. The Kalamazoo-area system of school-to-work transition is a good example of comprehensive cooperation between the schools and the local community college. A written articulation agreement specifies high school courses that may be counted for dual credit if a student enrolls in the community college after high school graduation; these include courses asso-

ciated with Tech Prep and courses approved for the related instruction requirements of registered apprenticeship. As originally designed, Kalamazoo's Health Occupation Program had students taking community college courses such as Basic Cardiac Life Support and Medical Terminology on the community college campus in both grades 12 and 13. However, this arrangement may change because the high school seniors experienced some difficulty in handling the independence and responsibility of college courses. By agreement with area school districts, the community college also offers every 8th grader the opportunity to spend a day on campus through a program called Kids Visiting Careers in College; the idea is to have students start to think about their career interests as they begin to plan their high school programs.

RELATIONSHIPS TO FOUR-YEAR INSTITUTIONS

The relationship of youth apprenticeship initiatives to four-year institutions of higher education is more tenuous than the connection with community and technical colleges. Nevertheless, it is important to think about the policy issues involved if, in fact, participants in youth apprenticeship programs aspire to a baccalaureate degree. (Indeed, several of the youth apprentices interviewed for this evaluation spoke of a four-year degree as their goal.) The problem to be solved is that, according to interview data collected in this study, most colleges and universities in the eight states are not currently prepared to accept applied academic courses as substitutes for traditional academic courses.

In one state, a key respondent speculated that perhaps 3 of the state's 15 public four-year institutions might relent on this issue in the next few years. The remainder are not likely to change their admissions rules unless they perceive some direct impact (e.g., a declining pool of eligible applicants) from the popularity of initiatives such as Tech Prep and youth apprenticeship. California's admissions requirements for both its university system and its state college system are clear and very rigid; applied academics courses do not fulfill the requirements, although discussion continues about the issue.

Among the eight states, West Virginia seems to be the exception to the rule that four-year institutions will be reluctant partners in new career pathways like youth apprenticeship. Enrollment in a baccalaureate program is

one of three post-high school options available to students in both Tech Prep and youth apprenticeship. There does not appear to be controversy in the state about the admissions eligibility of students who may enter college through these nontraditional routes—perhaps because 11 of the state's 13 community colleges are located on the campuses of four-year institutions and are under the jurisdiction of the college or university president. The system, therefore, is already more integrated than those in larger states with more independent systems.

DEVELOPMENT OF GUIDANCE AND INFORMATION CAPACITIES TO SUPPORT YOUTH APPRENTICESHIP

As other chapters in this report make clear, youth apprenticeship initiatives must be "sold" to business and industry if they are to succeed. Equally important is the need to sell this new educational strategy to students, parents, guidance counselors, academic teachers, and others in the education community. Researchers and policy analysts may be convinced that vehicles for applied learning are a critical part of the solution to the boredom, undereducation, underutilization, and unfocused aspirations of the so-called "forgotten half"; but the validity of these new options is by no means obvious to most families and educators. A college education is still the American dream. Hold a focus group with inner-city youth, and nearly all of them will say that they are going to college and aspire to professional occupations. Few students and their families or the guidance counselors on whom they depend for advice are aware that a newly minted journeyman in the machine tool trades can earn an annual income of almost \$50,000 before reaching age 30 (assuming that the person is motivated to work the overtime hours and long shifts that are typical in this industry).

Among the eight youth apprenticeship states, Wisconsin, Michigan, and West Virginia have focused the most resources and energy on addressing the information gap affecting pathways to technical careers. Wisconsin has launched an especially ambitious effort to improve its counseling and guidance system. When the governor's Cabinet for a Quality Workforce studied the German youth apprenticeship system, it found that the

combined efforts of education, business, labor, and government there provide extensive data and counseling services to youth entering the program. The new counseling system they envision is built on the German Service Center concept, and the state used its grant from CCSO to document the need for and develop plans for the new system. Wisconsin officials see counseling and guidance as pivotal to providing good information to consumers (youth and adults) about careers, skill requirements, and education and job training opportunities. The governor has requested funds to pilot five centers, at least one of which will be awarded to a school district operating a youth apprenticeship program.

Wisconsin's system envisions community-based centers serving both youth and adults. These centers will be linked with school-based counseling and guidance programs. In schools, teachers will take on more of the counseling and guidance functions using material built into their daily lessons. School counselors and guidance professionals will then serve primarily as facilitators and resource managers to assist teachers, parents, and students.

Wisconsin state officials believe good labor-market information is essential for identifying prospective industries for youth apprenticeship and providing effective career guidance. The state has developed a *Detailed Industry Trends* (1993) report to assist in industry identification. State officials are concerned, however, about the quality of information for guidance and counseling. They believe that user-friendly, reliable, and timely labor-market information is a key component of effective career guidance. Cabinet officials, employers, and educators in Wisconsin indicated they believe that DOL should develop a more effective and usable system for states and localities.

Michigan's approach is different but also a substantial effort at improving the career information available to schools and families. Representatives of the Michigan Occupational Information Coordinating Committee (MOICC) and the Michigan Occupational Information System (MOIS) have been active in state-level activities to develop and promote youth apprenticeship. MOICC oversees the coordination of data from relevant state agencies and implements accessible information systems for use by the education and training communities.

MOICC has two principal systems in place—the Occupational Information System and the Occupational Projections and Training Information System. The occupational projection system provides national, state, and, sometimes, regional data on indicators of occupational supply and demand by occupational area. MOICC also publishes *Michigan Career Outlook 2000* (1993). This is a tabloid-format listing of information on occupational areas, which is distributed through the vocational education system. The publication is printed in runs of 450,000 to 500,000 and is updated periodically. The current version provides students with information on registered apprenticeship but does not include school-to-work programs. The Michigan Occupational Information System is geared to direct use by job-seekers and is available in 99 percent of the state's high schools. It includes an interest inventory matched to careers; resource files on the careers; and information on schools, training sites, and student financial aid. MOIS, which has been a state-supported program, is in the process of becoming a fee-charging program.

MOICC and MOIS have for years made career information available to schools, students, and families in hard copy and on-line formats. However, this information typically ends up in high school career centers waiting to be discovered by enterprising students. To fill a perceived information gap and to put updated information on education and training opportunities directly into the hands of those who need it most, MOICC has developed several new publications:

- *Bridging the Gap from School to Work* (1992), a guide to work-based learning programs for counselors, parents, teachers, and other adults
- *How Do I Get From Here to There?* (1992), a student version of *Bridging the Gap*
- *A Counselor's Guide to Occupational Information* (1992), a guide to sources of occupational information for school guidance counselors who may be more familiar with college admissions procedures than with career counseling

Funds for printing all three volumes came from the state's Perkins Act allocation.

The West Virginia Department of Education has put considerable effort into the development of informational materials such as pamphlets, brochures, and guides. Targeted audiences include counselors, cooperative education teachers, and vocational education staff. These materials are being reviewed by an outside evaluator (for clarity, completeness, and utility) and revised accordingly.

Most of the eight states are aware of the importance of information and guidance in fostering the development and success of youth apprenticeship and other transition-to-work strategies. As one interviewee noted, the traditional way a high school measures its success is by the number of students who go to college; this suggests that school-to-work transition programs are bucking a strong tradition in trying to expand the definition of success. Another youth apprenticeship advocate noted how important it is to win over academic teachers, who perhaps have the most influence on students' ideas about their post-high school options. Pennsylvania's strategy for dissemination of information has consisted of state-sponsored regional conferences to inform educators and employers (but not parents and students) about youth apprenticeship and encourage applications for state start-up funds. California held a statewide conference described as youth apprenticeship's "coming out party" but has delayed plans for a publicity brochure. Part of the state's plans for student outreach are to improve capacity to direct students into industries with high needs for entry-level, skilled workers. Although its plans are not yet fully developed, Iowa has decided that marketing youth apprenticeship to students, parents, guidance counselors, and other educators is a major goal of its development activities.

Broadening the base of understanding about youth apprenticeship and other career pathway options will likely be key to any efforts to expand them into a true system. Even in states with strong local control of education—and hence where design and implementation of programs will not necessarily follow a state model—preparation and dissemination of clear information on students' programmatic choices and where those choices may lead seem to constitute a highly appropriate role for state agencies.

OTHER EDUCATIONAL ISSUES AFFECTING STATE-LEVEL SCHOOL-TO-WORK INITIATIVES

Although not primarily focused at the state level, several other education-related issues have arisen in one or more of the eight states. Each of these issues may warrant additional attention in the context of a federal youth apprenticeship initiative or as states attempt to go from pilot projects to full-scale initiatives.

PARTICIPANT SELECTION

The strategies and procedures for student recruitment and selection vary among the eight youth apprenticeship states and often among sites within states. Despite exceptions, an overarching impression from site visits is that youth apprenticeship programs are targeting the middle range of achievement or higher. When states fully implement the initiatives, state-specified eligibility requirements will include the following:

- **Maine.** Student must have passed the state's Common Core of Learning assessment tests, given at the end of 10th grade.
- **Pennsylvania.** Student must have completed 10th grade, passed Algebra I, be at least 16 years old, and have transportation to and from the work site.
- **Oregon.** Student must be at least 16 years old, enrolled in a vocational education program, and (as soon as it is available) have completed an 18-week career preparation program.
- **West Virginia.** Student must have completed one semester of technical training appropriate to the apprenticeship placement, have a grade-point average of at least 2.5, have completed Algebra I with a C or better, have no more than eight absences in the preceding school year, demonstrate willingness to continue study beyond high school, and have transportation to and from the work site.
- **Wisconsin.** Student must be a junior in high school; have satisfactory performance on the Wisconsin Student Assessment System 10th Grade Gateway; be on schedule to graduate from high school; and have participated in career exploration, planning, and guidance activities.

In the other three states, eligibility criteria are left to the discretion of local sites. One California pilot site will require students to have good attendance, exemplary behavior, a 2.5 grade-point average, and satisfactory teacher evaluations. In Oregon, the state eligibility criteria are considered a minimum, which local sites can and do augment. Even if there are no specified criteria, the application and selection process for becoming a youth apprentice can serve a similar purpose if students must persevere through several steps, meet deadlines, or write an essay.

With criteria such as these, it is obvious that in many places, youth apprenticeship is not for everyone. Specification of math prerequisites and minimum grade-point averages are clearly intended to signal that the programs are intellectually demanding. Attendance criteria exclude the young people most disaffected with school. The need to provide one's own transportation can exclude youth from very poor families and students with no access to public or private transportation.

Many key developers of the state youth apprenticeship initiatives are quite direct about the issue of student "creaming." They believe that their programs have much to prove to both employers and the education community. In the pilot stages, when a program's image is being formed, they want the best student emissaries representing the program to the outside world and to their own peers. They also want students who can handle the work-site schedule without falling behind in their academics. They hope that, as the programs become better known and more desirable, the possibility of participating in them will serve as an incentive for meeting the selection criteria. Though understandable, these policies indicate the importance of equity and access considerations over the long term.

SCHOOL STAFFING ISSUES

Even in states where the planning and design of the youth apprenticeship initiative have been primarily a state-level charge, much of the implementation responsibility naturally devolves to the local level and especially to the schools. We have already alluded to the possible resistance to the concept of youth apprenticeship among some teachers, administrators, and counselors. This resistance is nearly inevitable when educational institutions

confront the unknown; fortunately, however, unlike a change such as the systemic reform of academic subjects, implementation of youth apprenticeship is not dependent on 100-percent buy-in from members of a department or faculty. Local implementation does require serious commitment from some segment of the school staff who agree that the program is worthwhile. Because most of the local youth apprenticeship sites are operating on a shoestring, school staff tend to be loading extra tasks like development of student placements or an integrated curriculum onto their regular full-time assignments.

Such overloading is not unique to the youth apprenticeship initiatives. It happens whenever the schools embrace something new and, over time, leads to burnout in even the most committed advocates of an innovation. Some states, such as Michigan and Iowa, have granted seed money to pilot sites, which they can use to buy the release time staff need for design and implementation activities. In Pennsylvania, the necessity of hiring part-time adjunct teachers to provide the apprentices' academic instruction in some sites, in combination with the fact that the apprentices' schedules have them in school for three days per week and on the work site for two, has created the unanticipated benefit of creating time for academic and vocational teachers to plan an integrated curriculum together. States would be wise to consider ways in which they can continue to provide start-up funds as more sites come on board, hence allowing opportunities for continued, intensive planning. In addition, the initial pilot sites are likely to continue to need support for implementation activities before states fully institutionalize the program.

SCHEDULING ISSUES

Smoothly running high school programs revolve around (are even dominated by) the schedule, especially the allocation of space and human resources that will permit large numbers of young people to be enrolled in the courses that they must have for high school graduation and those that they choose out of interest. Preparing the schedule requires a craftsman's skill, and programs that cause students to deviate in some way from the march through six or seven 45-minute periods are anathema to the master scheduler. Youth apprenticeship is one of those programs. Although local stories about these

issues generally have happy endings, future implementers of similar kinds of initiatives should be aware that arranging flexibility in the high school schedule is not a trivial matter. The academy model somewhat alleviates scheduling problems because participating students move through their programs largely separate from the rest of the school. Holding academic classes at a technical or community college is another solution that some pilot sites have adopted.

EARLY OBSERVATIONS OF EDUCATIONAL OUTCOMES

It is too soon to judge the impacts of youth apprenticeship on central outcomes such as employment, wages, or pursuit and completion of postsecondary education and training. In fact, some of the states are just beginning to think about evaluation designs; and others have not reached that point. However, educators who are involved with the pilot sites and who know the young apprentices are already beginning to notice positive intermediate educational outcomes that are worth noting and that may contribute to development of a set of educational indicators for future evaluations. Their observations include the following:

- When the work-site segment of the program begins, the youth apprentices mature very quickly. The change is noticeable within a month and is characterized by an increased sense of responsibility and an awareness of workplace issues.
- Apprentices' report card grades improve.
- Vocational teachers involved in youth apprenticeship update their knowledge of the occupational skills needed in the workplace.
- Unions and schools develop closer relationships; union-developed training curricula are shared with vocational teachers.
- The presence of youth apprentices in regular vocational classes raises the quality of instruction and increases the motivation of vocational students.
- The existence of a youth apprenticeship initiative causes staff in other parts of the education system to take a new look at what they are doing.

These observations are largely positive. Early experiences in the youth apprenticeship demonstration states also suggest some areas where state and local designers and implementers of the initiatives should watch carefully for possible problems. One area that has already been noted is the issue of whom the programs target. Will youth apprenticeship become defined as a program for a relatively narrow slice of the secondary school population, or, as some cognitive scientists suggest, is the value of applied learning in real-life situations appropriate to a much broader spectrum of students?

Another concern about youth apprenticeships in some places is the extent to which participants' workplace assignments pull them away from the mainstream high school experience that includes sports and other extracurricular activities. For some students, these events are the primary reasons for attending school; and some may be torn between a new, more meaningful instructional approach and what they must give up to participate. Another consideration is that involvement in extracurricular activities can also be a factor in competitive college admissions. This issue circles back to the discussion of state goals for youth apprenticeship elaborated in Chapter 2. Will youth apprentices' post-high school options remain flexible?

Finally, there is the issue of personal support for the youth apprentices as they move into an adult world. Because this issue is mainly a concern at local levels, it is not emphasized in this chapter. Nevertheless, some pilot sites have taken steps to provide academic, social, and workplace support for students and to serve as liaisons between employers and the school or program administration. Because the youth apprenticeship initiatives tend to operate at low levels of extra funding, supporting staff positions like these is frequently a problem.

¹ Maine's model of youth apprenticeship involves full-time attendance at school during the fall semester and four days per week at the work site during the spring semester. On the fifth day, students return to school for specially designed academic instruction that correlates with their work experience. In the pilot year of the program, this instruction was provided by adjunct instructors hired by the Center for Youth Apprenticeship. However, the plan is for teachers at the students' home high schools to undertake this responsibility in the future.

BUILDING A YOUTH APPRENTICESHIP SYSTEM THAT IS COMPATIBLE WITH EMPLOYMENT

This chapter examines youth apprenticeship from the perspective of employment and the workplace, with special attention to the concerns and opportunities affecting three groups: employers, the registered-apprenticeship community, and organized labor. States have involved representatives of all three in the development of youth apprenticeship, and in some states youth apprenticeship is driven by employers or the registered-apprenticeship system. In this chapter, we review the study's evidence on the relationships that employers, registered apprenticeship, and organized labor have developed with youth apprenticeship and draw conclusions regarding these affiliations. We close with a review of state experience in carrying out federal and state employment-related laws within the context of youth apprenticeship.

EMPLOYER ROLES IN YOUTH APPRENTICESHIP

From the employer's perspective, participation in youth apprenticeship is desirable for at least three reasons: (1) to help improve the skill levels of youth entering the labor pool, (2) to identify and train future workers, and (3) to fulfill the employer's civic responsibilities within the community or region. From the perspective of the program developer or administrator, employers can make major contributions to an initiative's success. Employers are typically asked to advise state school-to-work initiatives in such areas as program design; the development of standards, credentials, and curriculum; and identification of the projected demand for entry-level career ladder occupations within their industries. Employers can also be recruited to market youth apprenticeship to their peers. In some states, employers lend credibility to the youth apprenticeship initiative by assuming a leadership role in program design and implementation. A final essential contribution of participating employers is providing work experience and structured work-site training through skilled mentors or meisters. These roles play out differently, however, at state and local levels.

ROLE OF EMPLOYERS AT THE STATE LEVEL

The scope of employer involvement at the state level

varies, depending, in particular, on their role in initiating the overall youth apprenticeship effort. In at least two states, the program impetus and direction came from employers and industry associations, whereas in other states a state agency or the governor is the driving force behind the vision and implementation of the program, with employers playing a supportive role only. The following are the key roles that employers play.

Involvement in Governance. Statewide advisory councils or steering committees provide a vehicle for employers to participate in the decision making and policy development that must accompany youth apprenticeship. The role and responsibilities of employers and industry representatives on these councils vary from direct oversight and control to consultation only.

Both California and Pennsylvania are taking an industry-driven approach in launching youth apprenticeship, and the central role of employers is reflected in the states' governance arrangements. California is making a concerted effort to involve employers in every aspect of its program, with business leaders playing a leading role in the youth apprenticeship steering committee, which is the policymaking entity for the state's youth apprenticeship program. Although relatively informal, the committee meets bimonthly and has developed California's vision and definition of youth apprenticeship. In general, the committee also uses industry leaders to help identify target industries, promote change within local communities, identify barriers, establish new relationships, and devise funding mechanisms. The steering committee also uses local program experiences to learn what works best to attract and involve employers and structure work-based learning experiences.

California's role for employers is facilitated by the fact that the state has a history of business involvement in education and training issues. The California Business Roundtable became involved in school reform activities in the early 1980s and issued a 1988 report containing many of the recommendations later included in the state's education reform blueprint, *Second to None* (California High School Task Force, 1992). The Roundtable is also supporting the development of skills standards for five major industries. Although many major business organizations representing the state's

large corporations see education reform as part of a comprehensive strategy to revitalize the state's economy and reestablish it as an economic leader, few small businesses yet appreciate this relationship. Small and medium-size businesses are more immediately concerned for their economic survival, given the state's economic problems.

Pennsylvania describes its youth apprenticeship program as industry driven, which is reflected in the state's policies, its governance structure, and its educational approaches. The state program is especially conscious of an obligation to meet the needs of business and industry. The Industrial Resource Centers and, to a lesser extent, the Ben Franklin Centers are the primary state-sponsored vehicles used to connect youth apprenticeship with employers. As previously noted, the Industrial Resource Centers are state-funded, private organizations created to assist employers in identifying, learning about, and adopting modern production techniques, technologies, and policies, including youth apprenticeship. The Ben Franklin Centers provide assistance to businesses in research and development, technology transfer, joint research and development between private companies and universities, and entrepreneurial assistance and training.

The remaining states in the study promote employer involvement at the state level but cannot be defined as employer driven or directed. Although these states have involved employers in various ways (as reviewed in Chapter 2), the impetus and direction for the program come from the governor or other state officials.

Advisory Assistance. Except in California and Pennsylvania, employers' primary role at the state level has been to provide advice and information through the state councils. For example, employers provide information on the outlook for job growth in their industries, which has a direct bearing on the industries that states have targeted for youth apprenticeship initiatives. Employers identify elements they see as crucial for program success, such as the availability of intermediaries to coordinate and intervene with education institutions and industry. Because a motivating factor for employer involvement is concern about the poor skills students display when they graduate from high school, employers

are helping states identify the types of work-readiness, academic, and technical skills that youth apprenticeship programs need to engender to ensure that students are ready for career-ladder employment at the completion of the youth apprenticeship experience.

Development of Curriculum, Standards, and Certification Procedures. In a few of the states studied, employers and industry associations have made significant contributions to the development of standards and curriculum. Wisconsin and Maine have had especially high levels of industry involvement in standards development. Wisconsin is using employers and industry associations to assist in the development of student competencies through entities known as implementation panels. Competencies have already been identified in the printing and finance industries. The Printing Industries Association and the Wisconsin Bankers Association have provided staff assistance and funding to support the identification of necessary competencies standards in these industries. The state is now working on competency identification for the health industry with assistance from state and regional health associations.

Maine created a separate Policy Advisory Board composed of representatives from the state's business, labor, and education communities to establish statewide performance standards or competencies for apprenticeship occupations. The board also ensures that Maine's Certificate of Mastery (awarded at the end of the youth apprenticeship, which is typically after high school graduation and one year of technical college training) is recognized throughout the state and the region. Maine's craft committees are responsible for developing and monitoring program standards for their respective youth apprenticeship programs, assisting with identifying skill and work competencies specific to the career field, and providing suggestions concerning curriculum development. Representatives from several machining companies in Maine have been convened to validate the standards developed earlier by the Department of Education in cooperation with local schools and businesses. The Center for Youth Apprenticeship staff have worked with masters at Blue Cross/Blue Shield to develop a training curriculum for the youth apprentices placed there, using the Develop a Curriculum (DACUM) process.

In addition to the experiences of Wisconsin and Maine, Workforce California, with leadership from the California Business Roundtable, is investing in the development of voluntary industry skill standards in the areas of telecommunications, banking/finance, health, printing, and electronics. These efforts are in an early stage, however.

Marketing. Recruiting new employers to participate in youth apprenticeship is essential to ensure its continued growth. Creating opportunities for employers and industry associations to share their experiences in youth apprenticeship with their colleagues is an activity that is being tried in some places; it may prove to be an effective marketing technique, as indicated by the experiences of California, Wisconsin, and Maine.

The California youth apprenticeship steering committee includes many employers who are involved in marketing the initiative to other employers. The project held a statewide conference in April 1993 that was well attended by employers. The Printing Industries Association of Southern California has been the most effective to date in directly marketing youth apprenticeship to its members, most of whom are small firms hard hit by the economic downturn. Wisconsin has used the experience and enthusiasm of employers in their local youth apprenticeship sites and the state industry associations to assist in marketing youth apprenticeship throughout the state. A representative of at least one company in Maine has made presentations on behalf of the state's youth apprenticeship program to other employers and interested school districts. In general, however, most employers have devoted their attention to design and implementation; and the potential of employers' marketing to other employers has yet to be realized.

ROLE OF EMPLOYERS AT THE LOCAL LEVEL

Employers appear to be strong partners in most local youth apprenticeship programs reviewed here. In some states, employers actively initiated the local programs. In other states, employers have been willing to become involved once local efforts were underway. Employers sit on local boards assisting in the program design and developing curricula. They play the essential role of providing training slots for the workplace training of youth

apprentices, coupled with training for work-site mentors.

In certain places, the level of employer support has been directly linked to local economic conditions. In particular, employers whose companies are laying off people find it difficult to justify participation in the program. Moreover, some labor/management agreements discourage participation under all but the most expansion-oriented climate. Even under normal economic conditions, employers sometimes believe that it is unfair to train youth whom they will be unable to hire on completion of the program, even though they understand that job placement is not necessarily the goal of the youth apprenticeship experience. Similarly, many employees are reluctant to expend the resources to train youth apprentices if they know they will not be able to keep them as full-time employees once the apprenticeship is complete.

As is true at the state level, employers participating in youth apprenticeship have proved to be the best marketers of the program to other employers within the community, although their potential effectiveness has not been fully realized anywhere.

Advisory Assistance. The Wisconsin and Pennsylvania initiatives have created independent local advisory boards on which employers play prominent roles. Wisconsin requires that the local board include representatives of secondary education agencies, technical colleges, employers, organized labor, and the local JTPA Private Industry Council. The boards are responsible for program design, implementation, and marketing. Pennsylvania has formed local stakeholder groups (composed primarily of employers) at each site; these groups work closely with the Industrial Resource Centers and are intricately involved in all aspects of the program. Iowa plans to require local management committees once the local Work Start projects are developed.

California did not initially require local steering committees, although it is now encouraging pilot sites to establish them. In Pasadena, the career academy advisory committee—consisting of educators, industry representatives, and community members—oversees the youth apprenticeship program. The committee is co-chaired by employers in the printing industry, one of whom is an active member of the state steering committee. The Printing Industry Association of Southern California is

the leading presence on the board, with members of its education committee taking the primary role in working with the academy. The Association will contribute funds to pay for a part-time coordinator who will have responsibility for youth apprenticeship and a federal replication grant.

West Virginia and some Oregon sites are using the local registered-apprenticeship committees (which include employers) as their advisory bodies. The committees' responsibilities include identification, registration, and selection of employers and apprentices.

Provision of Workplace Training Positions.

Employers are providing or are ready to provide workplace training slots in all states studied. In a majority of the states, most employers created one to three slots, although some employers employed and trained as many as 12 youth apprentices at one time. The latter examples occur in places where a few employers have served as the focus of the workplace training effort and have been involved in this capacity from the beginning of the youth apprenticeship initiative. In the more typical situation, an employer with a growing work force hires a youth apprentice and then promotes that individual to full-time status at the conclusion of a successful apprenticeship. Based on the success of that experience, the employer then seeks another apprentice.

In most places, the employer pays for the workplace training and also pays the apprentice's wages, although in some California sites youth participants engage in an unpaid internship linked to a paid summer job. In addition to the question of whether students are paid for their work at the job site, the nature and intensity of the workplace experience and its link to classroom learning are also key issues for employers.

The extent of the program demands placed on employers can affect their decisions regarding how many apprentices they will train or even their willingness to participate at all. According to local project administrators, employers generally prefer maximum latitude in deciding how to provide work-site training, including how to assign apprentices to supervisors (and mentors) and how to rotate apprentices through various task areas at the job site. Even so, programs that impose specific requirements on employers in these areas are able to

recruit and retain employer participants, at least in the small numbers required in the early stages of program operation. Regardless of their preferences in these areas, most employers welcome visits from program personnel to the work site and are receptive to suggestions regarding improvements in work-experience opportunities. Many program administrators have found that employers value expressions of appreciation from the program, including public displays of gratitude through press releases, awards ceremonies, plaques, and framed certificates.

The most significant problem in generating workplace-training slots is simply bringing employers to the table and persuading them to participate in the youth apprenticeship initiative. So far, the number of participating employers has been quite small in the participating states, as data in Chapter 1 indicate. This fact will constrain the growth of youth apprenticeship state by state and community by community, until it is addressed directly by policymakers and administrators.

Assistance as Mentors. The apprentice's mentor (or master, as the role is designated in Maine) plays a central role in the provision of work-site training. A skilled, experienced employee typically plays this role in an organization that is sponsoring the apprentice. The mentor is generally responsible for overseeing the apprentice's assignments and training, although the apprentice may also have a direct supervisor. In these situations, part of the mentor's role is to help the apprentice learn how to interact with the supervisor.

In Pennsylvania, mentors are expected to work with apprentices in every aspect of their work life: acquiring technical skills, juggling assignments, handling interpersonal relations, and so forth. They oversee the apprentice's rotation through every part of the company's operations, with the exception of areas that require specialized skills and the use of expensive equipment. They regularly observe the youth apprentice's work and, in consultation with supervisors, determine when the apprentice has mastered a procedure or the use of a piece of equipment. Based on the apprentice's performance, they plan for the apprentice's assignment to more complex tasks and for their rotation through a variety of jobs within the business. At some sites, mentors give the

apprentices their report cards and discuss grades with them.

Maine's employers are required to commit time for meisters to provide orientation, instruction, supervision, and evaluation of apprentices. The meisters are responsible for helping the apprentices gain the maximum benefit from their work-site experience, including an understanding of their overall career field.

Sites in California, Maine, Pennsylvania, and Wisconsin report that they provide specialized training to mentors. In Pasadena, California, the Printing Industry Association has held training sessions with mentors to discuss their responsibilities, where to go for help, and how to support student learning at school and the work site.

Assistance in Other Roles. These roles are quite varied, as the following examples indicate. In Wisconsin, California, and Pennsylvania, employers are assisting in developing the technical curriculum and providing advice on ways to incorporate workplace training experiences into the academic curriculum. Maine employers are required to fund one year of technical college for their youth apprentices, in addition to their paid work experiences.

The local sites in Michigan work with employers in several ways. In Kalamazoo, representatives of business and industry serve as mentors for 10th graders, who spend half a day working in a job. Kalamazoo project personnel found it essential to find a key individual in the industry who will be an advocate and help other employers in that field understand what a true education-business partnership really is. Another type of employer support is seen in West Berrien County, Michigan, where an employer contributed a work-site training lab at a cost of \$200,000.

In California, the Printing Industry Association sponsored a five-week training program at the Graphic Arts Institute in San Francisco for teachers at the Pasadena youth apprenticeship pilot site during the summer of 1993.

EMPLOYER CONCERNS AND SUGGESTIONS

Employers who were interviewed for this evaluation shared some of their concerns and made suggestions on

areas for improvement in youth apprenticeship programs. In California and Wisconsin, business participants suggested that full-time coordinators—or intermediaries—are helpful in the essential role of nurturing programs and serving as bridges between schools, businesses, and students.

In Wisconsin, employers suggested financial incentives, such as tax credits for participating employers. Elsewhere, employers proposed direct financial assistance to help defray the youth-apprenticeship expenses of small businesses. Some employers indicated their greatest concern was workers' compensation costs and the impact of youth apprentices on their insurance costs. There was no consensus on the need for financial incentives, however.

In West Virginia, employers said that the traditional trades do not have the capacity to train all the potential youth apprentices; this suggestion seems especially pertinent to the programs, such as those of Oregon and West Virginia, that rely on registered apprenticeship. Fear of legal problems has prevented some small businesses from pooling their resources and developing training and apprenticeship programs. In addition, some employers reported a need for better and more user-friendly labor market information to help select industries for youth apprenticeship programs.

REGISTERED APPRENTICESHIP AND YOUTH APPRENTICESHIP

Under registered apprenticeship, unions and employers develop their own requirements and administer their own training programs within the framework of basic standards laid down by state apprenticeship councils or the DOL Bureau of Apprenticeship and Training. According to a draft report prepared for the Federal Committee on Apprenticeship in May 1993, *The U.S. Registered Apprenticeship System: Current Efforts and Future Prospects for Meeting the Needs of America's Youths* (Miller, 1993), about 300,000 adult apprentices are registered in approved apprenticeship programs at any given time, with approximately 100,000 new apprentices entering the system each year. Approximately 415 trades have formal apprenticeship programs, of which about 60 percent are in the building trades.

Training programs for registered apprentices range from one to six years in duration, with most trades requiring from three to four years of training. Although most apprentices participate in classroom-based "related training," which is generally provided by local vocational schools and community and technical colleges, apprentices are primarily trained on the job. They are paid at progressive wage rates as they advance toward the journeyman level.

Employers and labor/management committees provide most of the funding for registered apprenticeships. Currently, the federal contribution through the DOL Bureau of Apprenticeship and Training is about \$16 million for staff costs to promote apprenticeship. States spend a total of about \$50 million each year for the state apprenticeship agencies' promotional and staff costs. States may use Perkins Act funds to cover the costs of providing technical training to apprentices. Apprentices may also use the G.I. Training Bill to pay their instructional costs.

In the late 1970s, DOL initiated eight school-to-registered-apprenticeship pilot programs. The programs were intended to demonstrate the feasibility of creating linkages between local school systems and employers to allow students to begin registered-apprenticeship programs while in high school. Participating students were placed in part-time apprenticeship positions during the school year. Training stipends were provided for up to one-half of the student apprentice's wages, not to exceed \$1,700 per year. The Federal Committee on Apprenticeship perceives this arrangement as a viable model for youth apprenticeship today.

An evaluation of this program found a number of positive outcomes for participating students tracked over a three-year period: somewhat higher earnings than a control group, higher job satisfaction levels, and more occupational stability. The employers (predominantly small businesses) also expressed satisfaction with the pilot program; indeed, the screening and training of the entry-level workers actually had greater appeal for employers than the funds available for stipends. However, a problem encountered by this school-to-apprenticeship initiative was articulation with postsecondary institutions for the required classroom-based instruction and training.

PROGRAM RELATIONSHIPS IN THE DEMONSTRATION STATES

The four main types of affiliations that youth apprenticeship programs have with registered apprenticeship are (1) a direct connection between the two programs; (2) registered apprenticeship used as the framework for youth apprenticeship although the two programs operate on parallel tracks; (3) registered apprenticeship as one of several possible outcomes for youth apprentices; and (4) the registered-apprenticeship community as one of many stakeholders playing an advisory role in youth apprenticeship projects.

In West Virginia and Oregon, youth apprenticeship programs and registered apprenticeship are intertwined, as noted earlier. Youth apprentices in West Virginia who successfully complete program requirements are guaranteed placement in the adult apprenticeship program, which eventually leads to employment as a journeyman.

The federal DOL/Bureau of Apprenticeship and Training office in West Virginia is responsible for providing technical education through the Joint Apprenticeship Training Advisory Committee; reviewing and assessing employer needs and current and future markets; developing on-the-job training and related training programs; referring registered training agents (participating employers) to technical education programs; encouraging apprenticeship programs to grant credit for classroom and work-based experience before the apprenticeship begins; and establishing that a youth apprentice may be allowed credit for up to half of the term of apprenticeship for that portion of his or her experience with a technical education center, as long as the experience is the equivalent to any received under a registered-apprenticeship program.

West Virginia's wages for apprentices vary by occupational area, but both the initial wage and incremental raises are covered under DOL Bureau of Apprenticeship and Training agreements. Wages for adult and youth apprentices are identical within occupational areas. In unionized trades, wages can be much higher than a high school student or graduate could expect; in nonunion businesses, they are likely to be lower than in unionized trades.

The Oregon youth apprenticeship legislation, passed

in 1990-91, is based on the traditional registered-apprenticeship model and housed within the state Bureau of Labor and Industries/Apprenticeship and Training Division. Youth apprenticeship and registered apprenticeship in Oregon share the following features: (1) seven regional apprenticeship offices act as liaisons between state and local apprenticeship committees, and (2) apprenticeship committees are made up of employers and workers, each with jurisdiction over apprenticeships within its trade or occupational area. Employers must be registered training agents, who have been approved by the apprenticeship committee in their trade or occupation. They must document their capacity to conduct training and must commit to the employment of the apprentices who successfully perform their duties.

Oregon's formula regulating the number of youth apprentices whom an employer may hire mirrors a similar set of ratios used to regulate the hiring of adult apprentices. No single employer is allowed to work with more than three youth apprentices at a time. Employers are allowed to take on one youth apprentice but must employ a certain number of journeypersons and adult apprentices in order to hire two or three youth apprentices.

As discussed in Chapter 2, Oregon seems to be moving away from the registered-apprenticeship model to some extent; the state legislature broadened the youth apprenticeship law in August 1993 to expand the scope of youth apprenticeship beyond the registered-apprenticeship framework and increase the total number of youth who could be involved in the program from 100 to 2,000 over a two-year period. The outcomes for completing youth apprenticeships have been expanded to include continuation in postsecondary education, including attainment of a Tech Prep associate degree or other professional/technical training. One concern in Oregon that may have precipitated the new legislation is that the registered-apprenticeship model does not accommodate a broad range of potential employers or occupations. Although Oregon has more than 400 apprenticeable trades, only 200 are currently being offered in the adult program.

Michigan and Wisconsin are using the framework of registered apprenticeship for their youth apprenticeship initiatives. Michigan is relying on the registered-appren-

ticeship structure but has not linked all school-to-work opportunities to the registered-apprenticeship program; indeed, most Michigan state officials expect the impetus and leadership for school-to-work programming to come from the local level. The state pilot projects allow a mix of approaches to registered apprenticeship. At the Kent County site, the program is called "early apprenticeship" and is endorsed by the registered-apprenticeship community and the Associated Builders and Contractors (ABC). Many of the students (but not all) sign indenturement papers and begin earning credit toward registered apprenticeship before high school graduation. In Midland County, the woodworking program has been developed through the local ABC organization, and all apprentices are indentured to a committee rather than an employer. The Flint program is defined as a preparatory program for registered apprenticeship.

Wisconsin has designed its youth apprenticeship program using the basic tenets of registered apprenticeship. The state's youth apprenticeship legislation designated a key role for the state Bureau of Apprenticeship Standards, although it is being implemented on a separate (though parallel) track from registered apprenticeship. The Bureau, in conjunction with the Department of Public Instruction and the State Board of Vocational, Technical, and Adult Education, worked on the design, development, and administration of the youth apprenticeship program. Bureau staff are currently fulfilling this function on assignment to the Governor's Office for Workforce Excellence.

Registered-apprenticeship programs in California, Iowa, Maine, and Pennsylvania have a minimal role and impact at the state level in relation to youth apprenticeship. Maine does have a small preapprenticeship program with close ties to registered apprenticeship. California, like many of the other states, has a registered-apprenticeship representative sitting on the state steering committees. However, in general, where the state vision for youth apprenticeship is seen primarily as an enhanced educational experience, rather than training for a job, registered apprenticeship plays a diminished role.

At local sites, the relationships appear to be stronger, as in both California and Pennsylvania. The Riverside, California, program, initiated by local unions, will be linked to registered apprenticeship. In Pennsylvania,

employers and educators expect that students completing a youth apprenticeship will be able to transfer to registered apprenticeship, with credit for the training and experience they have already attained.

ISSUES RAISED BY THE REGISTERED-APPRENTICESHIP COMMUNITY

Registered and youth apprenticeship programs share many similarities, such as the emphasis on workplace training and links between classroom and job sites. However, some of their goals differ; and they sometimes compete for financial and political support.

Youth apprenticeship programs are generally designed as an enhanced learning tool; for this reason, they do not necessarily incorporate job placement at completion as a key component of the program. In response to this feature, the registered-apprenticeship community has aired concerns that youth apprenticeship is building false hopes because jobs are not guaranteed on completion of the program, while the traditional apprenticeship program generally provides completers with access to regular jobs and stable employment. As a result of policy changes emphasizing multiple school-to-work pathways and a shift away from the term *youth apprenticeship*, this issue may resolve itself somewhat.

By integrating registered and youth apprenticeships, West Virginia and Oregon provide the most direct connection to jobs for youth apprentices. West Virginia's infrastructure for youth apprenticeship guarantees placement in the adult apprenticeship program for youth who complete the program requirements. Oregon youth apprentices, though in a program very similar to registered apprentices, are to be given "opportunities for advanced standing" in the regular apprenticeship program by local apprenticeship committees. As a result of these arrangements, youth apprentices in these states appear to be further along on the continuum of access to jobs. However, the programs are too new to know what participants will do once they complete the youth apprenticeship experience and, especially, whether students will opt for further education or training regardless of the job opportunities available.

Youth apprenticeship programs have generally designed activities to give youth broad exposure to an

industry, integrate academic and workplace learning, and improve the academic and technical skills of participants. By contrast, registered apprenticeship's focus is typically on imparting the technical skills needed for a specific occupation. These distinct approaches have led to criticisms that youth apprenticeship is watering down the technical training traditionally associated with apprenticeship. Reflecting this concern, a registered-apprenticeship official in Michigan said that the emphasis in youth apprenticeship should be on job experience, rather than education: seven-eighths of a program should be hands-on, one-eighth should be classroom instruction.

The registered-apprenticeship community has taken ownership of the term *apprenticeship* and in some places opposes use of the term *youth apprenticeship*. Registered-apprenticeship leaders in several states said that using the term *youth apprenticeship* dilutes the meaning of registered apprenticeship. In Oregon, some state officials believe that the term has been a major design constraint. The director of the Pennsylvania Apprenticeship and Training Council believes that the term *apprenticeship* should be reserved for the registered-apprenticeship program only; he is concerned that students and their parents are unintentionally being misled into thinking that youth apprenticeship will result in the receipt of journeyman papers, which in fact are awarded only after the successful completion of a registered apprenticeship. Michigan union representatives indicated that, to preserve the integrity and rigor of the traditional notion of apprenticeship, any program that calls itself *apprenticeship* should be consistent with registered apprenticeship. Given the degree of concern over the use of the term *youth apprenticeship*, it is surprising that Iowa is the only state out of the eight studied to call its school-to-work transition program something else—Work Start.

ROLE OF ORGANIZED LABOR IN YOUTH APPRENTICESHIP

Organized labor has played a smaller role than have employers in youth apprenticeship programs in the states reviewed. The study found no state in which organized labor was the impetus behind establishing youth apprenticeship, although organized labor appears to play an

active role in some local projects.

The majority of the states include organized labor in advisory capacities, serving on state and local steering committees and consortium boards. In Oregon and Wisconsin, labor was instrumental in the passage of youth apprenticeship legislation. Michigan created a state youth apprenticeship work group, including union officials, to focus on the relationship between the registered-apprenticeship system and youth apprenticeship. The product of this group's efforts was *Models for Michigan* (in draft), which delineates four distinct forms of apprenticeship, one of which is registered apprenticeship.

Relationships with organized labor are stronger at the local level. For example, one of California's pilot projects, at Norte Vista High School in Riverside, is a partnership with a local Joint Apprenticeship Committee; this project was initiated by union members and is linked with registered apprenticeship. Organized labor also plays a key role in several of West Virginia's local sites.

Several factors have deterred expansion of organized labor's involvement in youth apprenticeship. As described in connection with registered apprenticeship, the first issue is the use of the term *youth apprenticeship*. Other concerns labor has voiced include the fear of losing control over access to high-wage jobs, displacement of adult workers, and ensuring the quality of training youth apprentices receive.

Questions raised by the building and construction unions in Oregon were focused on concerns about the dilution of high apprenticeship standards and fears that the labor market will be flooded with workers. To address these concerns, Oregon's youth apprenticeship program set a participation cap of 100 youth apprentices in building and construction fields over a two-year period.

Michigan union representatives recommended that the number of apprenticeship training slots in an industry be based on the need for workers in that industry. Union officials in the state also warned that young people need to be protected from employers who pay a low wage and lay off workers as soon as they acquire enough skills to warrant a raise.

A union official in Iowa said that unions felt threatened by the program because they believe it will reduce

their control over workers and will create a pool of well-trained nonunion workers whom employers will hire at subunion wages. In Pennsylvania, some union groups are concerned that youth apprenticeship will be used as a vehicle to replace older, more highly paid workers.

A different type of union-related problem arises from the fact that employers' attitudes have limited union involvement in youth apprenticeship. The perception that youth apprenticeship is a union-dominated training program for large companies has limited employer interest in Oregon. Business people in California are leery of too much union involvement in youth apprenticeship, fearing it will threaten potential apprenticeship employers and could stop youth apprenticeship efforts before they begin.

STATE STRATEGIES TO ADDRESS PROBLEMS WITH EMPLOYMENT LAWS

Throughout this study, we have reported questions people have raised regarding two employment-related laws that can threaten the implementation of youth apprenticeship—laws governing child labor and workers' compensation. A third issue raised in California, which may affect other border states, concerns immigration restrictions. Some states have developed creative strategies to resolving problems with these laws, while other states are seeking guidance and federal-level solutions.

From interviews conducted for this study, it was not clear that any of these laws actually prevented an interested employer from providing training opportunities to youth apprentices. When an employer wants to participate, he or she will find a way to do so. When the employer is not ready to participate, "red tape" is a convenient excuse. Nevertheless, states will need some clear-cut strategies for responding to these concerns as they try to involve more employers in school-to-work transition services.

CHILD LABOR LAWS

In California, the printing industry is concerned with child labor laws, because employing students under 18 years of age in certain potentially hazardous positions, even in a job-shadowing experience, may be a violation

of legal protections for children. For this reason, some employers have expressed reluctance about providing placements to youth apprentices.

State staff in Oregon reported that potential employers have been extremely concerned about federal child labor and occupational safety regulations. Oregon reported the following to DOL in an internal 1992 progress report:

The single issue appearing to have the broadest and most negative implication (for youth apprenticeship) is the effect of the federal hazardous occupations orders for minors. Data obtained from apprenticeship committees statewide indicate that employers are concerned about the possible consequences of misinterpreting the hazardous occupation orders and exemptions, and many have said they will not participate until the federal or state wage and hour division clarifies the exemptions.

These concerns have created a need for technical assistance in interpreting regulations. In response, Oregon has had to use some of its program-development resources to assist local employers in complying with child-labor restrictions. Responding to some of these concerns, the state passed legislation that exempts employers from certain state regulations applicable to registered apprenticeship, thus making it more attractive for them to work with secondary school students. Oregon has issued a booklet entitled *Child Labor Law and Youth Apprenticeship Programs* (1993) that explains the applicable restrictions.

The West Virginia Education Department, working with the federal registered-apprenticeship program, has developed materials that review labor laws and occupational safety issues in the context of youth apprenticeship. The state also reports that waivers have been obtained for seven occupations covered under child-labor restrictions, to increase the variety of youth apprenticeship placements.

Wisconsin child labor laws restrict the number of hours students are allowed to work when school is in session, but they do not apply to student learners in approved school programs during normal school hours. Therefore, youth apprentices' work-based learning hours

are not applied against the total number of nonschool hours allotted. The Department of Industry, Labor, and Human Relations in Wisconsin certifies all work sites; and, although certification does not relieve employers of future liabilities, it does provide guidance on the acceptability of the work site and creates an opportunity for employers to obtain clarification of rules and regulations. Once an industry is approved by the Youth Apprenticeship Advisory Council, an implementation panel reviews any health or safety issues that may arise.

Another possibility for responding to the issue can be seen in Oregon and a Michigan site, where employers have pooled resources and created training centers for their adult apprentices. These centers could be used to provide work-site training for youth who would otherwise be prevented from entering certain training programs because of federal hazardous-occupation laws.

WORKERS' COMPENSATION LAWS

Concerns about liability under workers' compensation have arisen in Oregon. Youth apprenticeship legislation there makes employers responsible for workers' compensation obligations, and state staff are providing information and technical assistance to employers to clarify what they call "common misconceptions."

Similarly, in West Virginia, by state statute, all apprentices must be insured and covered by workers' compensation provisions. Therefore, costs associated with hiring youth apprentices are the same as for hiring other employees. West Virginia Joint Apprenticeship and Training Advisory Committee members have expressed concern that working with youth apprentices may result in greater financial risks, however; and this issue may need to be addressed as the program expands.

Though workers' compensation is not an issue yet in California because youth apprentices just began workplace training in the summer of 1993, program leaders anticipate that workers' compensation costs will become an issue there in the near future. California employer surveys have shown that the cost of workers' compensation insurance is one of the primary reasons firms have moved out of the state.

Maine, as indicated earlier, has confronted this issue by creating the Center for Youth Apprenticeship to administer the payroll for youth apprentices and pay all

applicable taxes and insurance premiums, hence relieving employers of this burden.

IMMIGRATION LAWS

In Pasadena, California, an immigration problem has arisen. According to state and federal law, young people must be educated in public schools regardless of their immigrant status or that of their parents. However, it is illegal for employers to hire immigrants without documentation of Immigration and Naturalization Service approval to work in the United States. Often families will not allow students to obtain such documentation because the family is afraid of being deported. Employers see themselves in a Catch-22 situation. If a student is enrolled in a Career Academy but does not have adequate documentation, employers will be unable to provide a paid internship for that student. To resolve this problem, employers would like the state to address the possibility of obtaining independent immigration status for students irrespective of the family's status.

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As this chapter indicates, development of a youth apprenticeship system poses challenges to state government in areas in which state personnel may have little experience. Although educators, employers, organized labor, and the registered-apprenticeship community may understand their own traditional areas of responsibility, they are typically not accustomed to working as a team, addressing a unique goal. Working out new relationships takes patience, good will, and time. The next chapter describes how the DOL and CCSSO grant programs provided frameworks within which people could develop these new relationships and initiate new school-to-work opportunities for students.

GRANTEE ACTIVITIES UNDER THE DOL AND CCSSO DEMONSTRATION PROGRAMS

The most powerful influences on the development and implementation of systems of youth apprenticeship in the eight states were the institutions, conditions, networks, and personalities unique to each state. Even so, the two national demonstration programs played important roles in legitimizing and shaping these efforts. This chapter reviews grantee activities under the two programs, with attention to how they might point the way to further national-level support for the development of youth apprenticeship and other related forms of career pathways for youth.

The main portion of the chapter describes what each state planned to accomplish under its grant(s) and what it actually achieved. We then analyze several issues arising under the grants, including identification of the types of activities states ultimately saw as their highest priorities under the demonstration grants. Our analysis includes a consideration of the differences in the operations and effects of the DOL and CCSSO grant programs.

ACTIVITIES PLANNED AND ACCOMPLISHED UNDER THE DEMONSTRATION GRANTS

As already noted, both DOL and CCSSO set a single objective for their programs: the development and adoption of statewide systems of youth apprenticeship that would assist the school-to-work transition of American youth. In verbal contacts and written guidance, DOL and CCSSO program administrators specifically emphasized the creation of infrastructures that would bring the necessary parties together within a state and, in so doing, would permit states to strengthen work-based learning and integrate vocational and academic learning in the context of youth apprenticeship. In addition to creating infrastructure, program guidance also addressed the use of grant funds to initiate and support local pilot projects.

The DOL and CCSSO programs sought to implement their goals through the provision of both seed money (through grants of \$200,000 and \$50,000, respectively) and technical assistance. In return, grantees were required to submit periodic reports (bimonthly to DOL and quarterly to CCSSO) describing their progress in implementing their plans. With this broad scope allowed

by their funders, the eight states planned a variety of activities.

CALIFORNIA

California planned three primary activities under its CCSSO grant:

- Establish and convene a statewide steering committee that would oversee all aspects of the youth apprenticeship initiative
- Define youth apprenticeship for California and, mobilizing strong industry support, initiate programs in several high schools
- Create a network of local apprenticeship projects that could learn from each other and thus achieve further improvements in workplace learning

With receipt of its grant from DOL, California sought to build on its initial activities through efforts to (1) expand the steering committee to achieve better representation of industry and community colleges, (2) develop and disseminate informational materials on youth apprenticeship, (3) identify standards for youth apprenticeship certification in printing and health, (4) provide curriculum frameworks and other technical assistance to help integrate academic and vocational education, and (5) develop state legislation.

Data collected in this evaluation indicate that California achieved the major infrastructure developments that it identified as objectives early on. In particular, it established a steering committee and made organizational changes that should help ensure its long-term success. In particular, it refined the committee's membership to include representation of all major stakeholder groups in the state; and it made the committee accountable to all the state's agencies involved in youth apprenticeship. The state then used the committee as both the operating and the policy body for implementing activities in three other areas—defining youth apprenticeship for California, selecting target industries, and approving grants to three pilot sites. The state also began working with federal, state, and private-sector initiatives to develop industry skill standards, new assessment tools, and curricula that integrate academic and technical learning.

The state did not achieve (1) widespread networking or dissemination related to youth apprenticeship or (2) significant progress in the development and adoption of career-pathways legislation. None of the three pilot projects—in Pasadena (printing), Riverside (construction), and Sacramento (health)—had students in either paid or unpaid apprenticeships during the school day, as of the end of the 1992-93 school year, although paid summer internships were initiated in June 1993. A central reason for this slower-than-planned pace has been the state's economic problems, which have made employers reluctant to commit to any hiring in the context of youth apprenticeship or otherwise. These factors also help account for the state's decision to wait for a clear signal from Washington before adopting legislation on youth apprenticeship. Because of delays created by poor economic conditions and state staffing changes, the state requested and obtained an extension of its DOL and CCSSO grants period until June 1994.

IOWA

Iowa set objectives for its DOL grant that would meet the state's dual goals of accelerating education reform and preparing a more competitive work force. Its planned grant activities were designed around the state's Work Start program and, specifically, that program's youth apprenticeship component. Under the DOL grant, Iowa planned the following objectives:

- Create a system design for youth apprenticeship that would serve as a means of implementing Work Start; the process for this would include work groups and data collection involving all relevant sectors and communities in the state.
- Develop strategies to recruit and retain underrepresented groups in the Work Start program.
- Market youth apprenticeship to relevant groups across the state and identify additional resources for youth apprenticeship.
- Provide incentives, in the form of challenge grants, and technical assistance to school districts interested in implementing youth apprenticeship.
- Develop local programs—including articulation arrangements between secondary and postsecondary institutions—that would be ready for implementa-

tion in the 1993-94 school year.

- Design an evaluation process, including both formative and longitudinal-impact components.

Observation of Iowa's implementation of its DOL grant indicates that the existence of Work Start has provided some stimulus to the development of youth apprenticeship, but has not sparked the type of multifaceted implementation envisioned in Iowa's work plan for the DOL grant. The reasons for this slow start include staffing issues within the Iowa Department of Education, poor coordination with the state's community college system, and resistance among key officials of organized labor. Even so, by the end of June 1993, the state had awarded planning grants of \$5,000 to \$10,000 each to eight school districts to develop comprehensive plans for local Work Start implementation in both schools and job sites.

During the grant period, the state has developed the capacities of the State Agency Steering Committee, which is overseeing the state-level implementation of Work Start. This group, which includes representatives of key offices in state government, provides an appropriate infrastructure for bringing together all relevant state-agency parties for the longer-term implementation of Work Start and any possible successor programs. The State Agency Steering Committee also created a second body—the Work Start Advisory Committee—that handled the selection of local pilot sites; it includes representatives from business, labor, teaching, school administration, and registered apprenticeship.

One activity the Steering Committee has launched is a series of meetings (which the state refers to as focus groups) with business and industry leaders to introduce them to youth apprenticeship and to generate their interest in participating in the state program. The meetings were said to be productive, but members of the State Agency Steering Committee believe that more meetings are needed and that the number of industries targeted needs to be increased.

Although these accomplishments are significant, Iowa has not yet followed up with the other activities (e.g., coordination with postsecondary education, outreach to underrepresented groups, and design of evaluations) that the state planned to accomplish under its DOL grant.

Since Iowa obtained an extension of its grant period and has built expert staff to administer the program, it is reasonable to expect that the pace of implementation activities will speed up.

MAINE

Although Maine did not apply for or receive a CCSSO planning grant, it developed an especially comprehensive work plan for implementing its CCSSO and DOL demonstration grants. Under its plan, Maine undertook to:

- Develop the capacities of the state's new Center for Youth Apprenticeship, drawing on guidance from its International Board of Governors
- Implement a pilot project in four Portland-area high schools during the 1992-93 school year
- Develop statewide performance standards for youth apprentices in occupational skill areas, using its Policy Advisory Board of representatives from business, labor, and education
- Develop achievement standards in academic areas
- Adopt and implement career-exploration activities for 9th and 10th graders
- Assist schools in integrating workplace learning throughout the curriculum and in implementing youth apprenticeship

As a result of many factors, including support provided through the DOL and CCSSO grants, Maine was able to accomplish most of its plans. At the heart of its work, the state launched—and staffed—the Center for Youth Apprenticeship. The Center's responsibilities include coordinating across the relevant components of state government, working with groups such as the youth apprenticeship craft committees (which the Center formed to develop skill standards in relevant occupational areas), and delivering direct technical assistance to local youth apprenticeship projects.

Although the Center was able to initiate the Portland pilot during the grants period, its scope is smaller than originally envisioned (15 students, as opposed to the planned 40-50 students). Center staff said the smaller number of students resulted from recruiting students as juniors rather than as sophomores, and therefore fewer

students were found who were interested in participating. Even so, project leaders believe that the smaller number was advantageous in the first year. Similarly, although some progress was made in integrating workplace learning into the regular curriculum, the effort did not involve full-time academic teachers employed by the participating schools, because in its first year the program hired temporary teachers to provide youth apprentices' academic instruction. No instructional activities are anticipated in technical colleges until the first wave of youth apprentices graduates from high school.

Maine made less progress in another set of activities planned under the DOL and CCSSO grants—the development of career-exploration activities for students in the early high school grades. Center staff were unable to devote attention to this goal because of the time and effort required to establish the Portland pilot project.

MICHIGAN

With its DOL grant, Michigan sought to develop a support structure for youth apprenticeship initiatives (both current and planned) across the state. Two key objectives for that structure were to:

- Facilitate interagency cooperation within state government, using the Governor's Workforce Commission as a base
- Promote significant private sector involvement, drawing mainly on the private sector advisory committee

Using this support structure, the state proposed to develop and assist at least two new youth apprenticeship sites that would be ready to begin implementation in the 1993-94 school year. The state also planned to improve local capacities to promote career awareness and to deliver occupational information to students, parents, and guidance counselors.

Current evidence indicates that Michigan has made progress in implementing some of these activities, although the DOL grant may not have been an important factor in achieving this progress. Most notably, the governor issued an executive order creating the Workforce Commission for two years; and the Commission is expected to be continued permanently at

the end of the initial period. This entity provides an interagency structure to oversee (but not directly administer) youth apprenticeship and other activities that require comparable governmentwide coordination.

Consistent with the spirit of this effort, the state Superintendent of Public Instruction and the state Department of Labor created an interagency strategic planning group to develop a unified state plan for youth apprenticeship. The formation of this group was widely considered to be something of a breakthrough in Michigan, which does not have a history of cooperation between education and labor. One of the planning group's most important efforts has been the review of problems in the coordination of registered apprenticeship and youth apprenticeship. The result of this review has been the delineation of four forms of apprenticeship (currently in draft), as discussed earlier in this report.

In January 1993, the state awarded competitive challenge grants averaging \$15,000 each to 10 sites, 8 of which are new youth apprenticeship projects and 2 of which are expansions of existing projects. In addition to these grants made using DOL funds, the state board of education also awarded five planning and development grants using Perkins Act funds.

OREGON

The central priority set by Oregon under its DOL grant was the development of a small number of sites that would initiate youth apprenticeships in occupational areas important to the regions in which they are located; the state anticipated up to 100 placements. In addition, the state planned to use DOL resources to develop and field test a career-preparation curriculum.

The state has launched youth apprenticeship activities in six high schools, which are also demonstration sites for the state's education reform act. Three of these schools are involved in developing the state's planned career-preparation curriculum. That effort is essentially complete, although the state expects to conduct additional training and testing activities before the curriculum is disseminated statewide. Although youth apprenticeship is underway in each school, interview respondents said that the presence of the school reform demonstration alongside the youth apprenticeship pilot is creating an overload of change activities in some of the schools. The

experience of these sites will be important, however, as Oregon moves into implementation of the next phase of its amended youth apprenticeship program.

PENNSYLVANIA

Pennsylvania chose not to focus its CCSSO-supported efforts on the development of state-level infrastructure, but to concentrate instead on spreading youth apprenticeship to sites across the state, in addition to the six where youth apprenticeship was already underway. To do this, they planned to use the CCSSO grant to defray the cost of regional conferences intended to "educate and excite new employers and educators to the opportunity and need for expansion of the youth apprenticeship initiative."

The regional conferences were held as planned in the spring of 1993 and involved state officials, local youth apprenticeship administrators and employers, and representatives of schools and businesses that are interested in participating in youth apprenticeship. The timing of the conferences coincided with the state's announcement of a competition for new three-year grants to initiate youth apprenticeship in local sites.

The limited scope of Pennsylvania's CCSSO-supported activities is consistent with the small size of its demonstration grant. The state's grant from CCSSO was \$25,000, half the size of the other implementation grants awarded by the Council. Pennsylvania's grant was awarded six months into the grant period, when Pennsylvania was asked to replace another state—Minnesota—that had initially received a CCSSO implementation grant and then had withdrawn from the CCSSO program because its efforts were at the planning, rather than implementation, stage. Because Pennsylvania had been ranked sixth by the application review panel, it was the first in line to replace Minnesota in the CCSSO program. Notwithstanding the small size of the CCSSO grant, the state's youth apprenticeship activities are relatively extensive, with 16 sites statewide and 100 youth apprentices. This relatively broad scope was made possible, in part, by the state's receipt of a large DOL grant (\$486,250, awarded in 1990, followed by an additional \$250,000 in 1992); the grant was used to support the development of Pennsylvania Youth Apprenticeship Program demonstration projects.

WEST VIRGINIA

Based on the design developed under its CCSSO planning grant, West Virginia identified four activities that it intended to undertake with its CCSSO grant:

- Conduct training sessions for educators, employers, and others who would be involved in implementing the program of registered youth apprenticeship
- Create apprenticeship slots in local projects and recruit, screen, and assign students
- Develop, test, and revise informational and instructional materials about registered youth apprenticeship
- Initiate instructional and counseling activities with younger students (grades 7-10), to develop a pool of students ready for youth apprenticeship in several years

State officials have essentially collapsed these four activities into two categories—(1) creation of apprenticeship slots and placement of students, and (2) development of materials and training of educational personnel in using the materials.

Because West Virginia is working exclusively through the registered-apprenticeship program, its efforts to recruit employers have been channeled through registered apprenticeship, as well. As a result, state and local personnel have had direct contact and easy access to employers that are already registered training agents, whether or not they are actually able or willing to expand their current training programs to include youth apprentices. At the same time, however, the state's contacts with other employers have been somewhat more complicated, because employers must decide to become part of the registered-apprenticeship program, as well as youth apprenticeship. State officials said, however, they do not believe that the registered-apprenticeship link has proved to be a deterrent to employer participation. So far, West Virginia has lined up 35 employers and 41 youth apprenticeship slots.

Materials development has served as a centerpiece for training efforts in the state. The West Virginia Department of Education, in collaboration with the federal registered-apprenticeship program office, is developing a series of informational and curricular materials

targeting various key groups in the educational system, including guidance counselors, cooperative education coordinators, and others. These practitioners have attended regional conferences around the state to review draft materials, suggest revisions, and field test the revised materials. This process has been structured to give frontline service providers a high degree of ownership of the process and also to keep them informed about the West Virginia initiative.

At the state level, the developmental process has involved a few people (e.g., the DOL registered apprenticeship representative in the state, the state's cooperative education director, and various state vocational education and community college personnel). Aside from general support for the overall effort, the state superintendent of schools has exhibited little direct involvement in the youth apprenticeship initiative. He has, however, stated a commitment to make the public schools more responsive to business demands for well-trained, entry-level workers.

WISCONSIN

Wisconsin designed different activities for implementation under the CCSSO and DOL grants. The CCSSO grant sought to implement recommendations emerging from an earlier series of focus groups involving students and parents, which had been supported through the CCSSO planning grant. Those recommendations indicated a strong public interest in youth apprenticeship and highlighted the need for expanded career-awareness and exploration activities in middle school and the early years of high school. Accordingly, the state made plans to use its CCSSO implementation grant to:

- Design a statewide system of guidance and counseling support services for youth participating in all options under Wisconsin's initiative on school-to-work transition
- Conduct focus groups with parents, students, guidance personnel, job counselors, and business leaders to determine reactions to the broad outlines of the guidance and counseling support system

With its DOL grant, Wisconsin sought to take other steps to develop its infrastructure for implementing

apprenticeship statewide. It aimed to:

- Improve its capacity to establish industry skill standards
- Use labor market information in school guidance
- Design curriculum formats that integrate academics with work-based learning
- Establish internships to cross-train educators and industry trainers
- Expand accountability systems

The CCSSO and DOL grants to Wisconsin were implemented within a context of broad statewide involvement in youth apprenticeship, led by a governor with a serious commitment to this school-to-work transition strategy. Two major indicators of the governor's commitment have been the development of an extensive infrastructure for cross-agency collaboration in developing youth apprenticeship in Wisconsin and also his request to the legislature for appropriations to support youth apprenticeship activities over a two-year period.

As planned, the K-12 Guidance Implementation Panel prepared a report recommending improvements in the development and dissemination of career-related information needed by school guidance counselors and other professional resources serving youth and adults. The Department of Public Instruction also arranged with JFF to hold a series of focus groups to ascertain the responses of students, parents, guidance counselors, and school administrators to the recommendations. The recommendations, as modified by the focus-group results, have been incorporated into the governor's budget request.

A portion of the DOL grant was used to support the salary and expenses of the temporary executive director (who is the state's former elected superintendent of schools) of the Office of School to Work Transition within the Department of Administration; this office has a policy-analysis responsibility, as contrasted with the Governor's Office of Workforce Excellence, which is responsible for program implementation. The state is currently completing the development of student skill competencies and curricula in printing and finance, drawing on translations of comparable German curricula and standards. The state is also continuing efforts to inform employers, students, and parents about the

opportunities available to all parties through youth apprenticeship.

ISSUES IN THE IMPLEMENTATION OF GRANT ACTIVITIES

Evaluation data indicate that each of the eight states was able to implement many of the activities that it had planned. Most important, available evidence suggests that each of the states understood the systemic nature of the change that the grant programs sought to achieve and that some portion of the grant-supported activities they undertook did, in fact, advance the development of a system of youth apprenticeship within the state. Wisconsin and Pennsylvania appear to have made particular progress in developing such a system, although the infrastructure supporting youth apprenticeship in both places is relatively fragile.

It is also clear that the eight states are at very different stages in the process of achieving youth apprenticeship systems. Even though the implementation of grant activities moved the developmental process forward in each state, and the grants lent legitimacy and visibility to the systems-development effort, the grants themselves may not have been the most important factors in the progress that was achieved during the grant period. Indeed, in states experiencing significant support for youth apprenticeship from the governor, the demonstration grants may have been almost incidental to the progress achieved during the period.

A close look at how each state addressed systemic change indicates that state administrators tended to establish three main priorities for the use of their demonstration grants. The first priority was developing the state-level infrastructure needed to involve all the relevant parties in the development of a state system of youth apprenticeship. The second priority was support for pilot sites. The third priority was developing the technical and advisory support (e.g., curriculum, standards, and employer recruitment) needed locally to ensure that local youth apprenticeship projects adhere to the key principles of the approach. In addition, a fourth priority underlay many state decisions about their grants—to take maximum advantage of visibility and legitimacy conferred by the national grant award.

USE OF DEMONSTRATION FUNDS TO DEVELOP INFRASTRUCTURE

A necessary element in the development of state capacity to support youth apprenticeship is the existence of state-level infrastructure that permits the appropriate governmental and nongovernmental interests to talk to each other, resolve problems, and implement complex education- and employment-related activities. This type of infrastructure necessitates strong links among state departments and agencies with overlapping or related missions. Such links may exist in the form of interagency bodies, cross-agency sign-off procedures, personnel exchanges, joint training opportunities, and the like. Efforts to create or strengthen these types of infrastructure can take many forms, including the creation of entirely new operating agencies or the formation of new super-councils to develop policy guidance for implementation through normal agency mechanisms and to hold implementing agencies accountable. Because the creation of infrastructure necessarily involves shifts in bureaucratic decision-making authority (or turf), the creation and installation of new governmental units can be exceedingly difficult and time and effort consuming, especially if the new organizations are expected to make decisions about the allocation and use of resources and if resources are limited.

The national demonstration grants were able to contribute to the development of enhanced infrastructure because of the perceived mandate or direction that accompanied the grants. State grant administrators, for example, could justify to doubting legislators and bureaucrats a new interagency council—or new powers for an existing council—by claiming that it was needed to carry out the intent of the DOL or CCSSO grant.

In West Virginia, for example, the existence of the CCSSO grant elevated the status and formality of what had previously been only informal links between the state Education Department and the state's registered-apprenticeship office. This type of enhancement in the formality of an interagency collaboration means that it may be more likely to survive any temporary setbacks or personnel changes. With the reform mission and spotlight of the national demonstration programs, administrators in California, Iowa, Maine, Michigan, Oregon, and Wisconsin used their grants, in part, to implement

needed changes in state infrastructure. Although states with strong gubernatorial support for youth apprenticeship (e.g., Pennsylvania) may have chosen not to focus on developing state-level infrastructure, they may find that they need it later if a new governor should come to office with no commitment to the strategy.

USE OF DEMONSTRATION FUNDS TO SUPPORT PILOT SITES

A second priority of state grant administrators was supporting pilot sites. This activity was appealing to administrators for several reasons. First, it provided supplementary financial and technical support to sites that were already endeavoring to initiate youth apprenticeship projects on their own. Second, it provided a forum for testing approaches (including curricular components and performance standards) being considered for broad dissemination. Third, it provided states with leverage to shape the design and implementation of local youth apprenticeship efforts, some of which were being initiated under local leadership. Fourth, it generated interest in youth apprenticeship outside the state capital and hence built new constituencies for the program, which would be valuable in state-level political battles. As a result of these and other factors, seven of the eight states have pilot projects underway, although some are using state and local funds for this purpose, rather than the national grants.

USE OF DEMONSTRATION FUNDS TO DEVELOP PROGRAM SUPPORT CAPACITY

A third important priority for the use of the demonstration funds was developing and testing a wide range of program supports. These included the development of (1) performance standards for youth apprentices; (2) curriculum that integrated vocational and academic learning and that used both classroom and workplace settings; and (3) new methods of measuring and certifying student achievement, including the application of performance standards. Program supports also included the development of capacities for (1) recruiting employers and integrating them productively into the youth apprenticeship program; (2) informing students, parents, and the public about the benefits of youth apprenticeship; (3) developing collaborative programs and articulation agreements

with postsecondary institutions; and (4) strengthening the guidance and information-sharing capabilities of school programs serving high school students and younger youth. In each of these instances, state leadership in building the support capacity served to streamline the development process and make it more efficient than it would have been if each locality had proceeded independently.

USE OF DEMONSTRATION FUNDS TO CONFER VISIBILITY

A grant-related factor that was important to varying degrees across all eight states was the visibility and legitimacy associated with selection to receive a DOL or CCSSO grant. This raised the public awareness of the youth apprenticeship effort and, in particular, gained the notice of higher-level administrators within state government, sometimes bringing to their attention for the first time the staff with direct responsibility for school-to-work transition. An example of a place where this factor was particularly important is West Virginia. Not surprisingly, the issue of visibility was somewhat less important—though still a factor—in states (such as Maine, Pennsylvania, and Wisconsin) where the governor had a commitment to youth apprenticeship that predated the grant award, because the governor's interest itself conferred visibility to the effort.

KEY DIFFERENCES IN THE DOL AND CCSSO GRANT PROGRAMS

The major difference was simply the amount of the grants—\$200,000 (DOL) versus \$50,000 (CCSSO, except as noted in Pennsylvania). In general, grantees developed more ambitious plans for implementation under the larger grants. This was not uniformly true, however. West Virginia, which received only \$50,000 in implementation funds, carried out a plan that was virtually as extensive as that of a comparable state, such as Iowa, with a grant four times as large. The explanation for this lack of a consistent relationship between grant size and program scope is that in some cases the state's circumstances permitted a relatively small amount of national funding to leverage a much larger amount of state-level support.

A second important difference was that the CCSSO demonstration grant program had been preceded by a series of planning grants (of \$20,000 each), which were received by six of the eight demonstration states. The planning grants served many desirable functions, not the least of which is that they directed explicit attention to the planning function, highlighting it as an essential first step before undertaking program operations. In most cases, the plans have served as guides to activities under the implementation grants. Even though they proved in several instances to be too optimistic about how quickly the state could move, the plans (as revised and refined) have served many useful purposes in the states' early implementation activities.

A third difference was that CCSSO required states to compete for their grants. This meant that the applicant state had to have a coherent plan for implementing its grant on the first day of the grant period. The DOL grantees did not develop their work plans until after they had been selected. Review of the states' plans and activities suggests that competition prompted applicants to sharpen and improve their implementation designs. Delays in start-up on the DOL grants were offset to some extent in that most of the DOL grantees asked for and received extensions to their initial grant period.

Finally, the two grant programs were similar in one surprising respect. Although DOL grantees drew heavily on the capacities of employment and labor agencies, the two states that did not have DOL grants (Pennsylvania and West Virginia) also significantly involved those offices in their youth apprenticeship operations. Similarly, the DOL grantees made extensive use of their state education departments and local schools. This amount of cross-agency involvement happened without direct instruction from the funders, indicating that the grantees saw the value of broad interagency involvement, irrespective of the existence or source of outside support.

PROSPECTS FOR THE DEVELOPMENT OF STATE SYSTEMS OF SCHOOL-TO-WORK TRANSITION

At the time of the study, most of the eight states had just begun local operations under their youth apprenticeship initiatives. Although these circumstances limit the conclusions that can be drawn about program effects, they have not constrained our ability to identify early patterns in the development of state capacity to mount and operate systems of youth apprenticeship in support of school-to-work transition.

This exercise is especially important in light of current efforts to establish a national framework for the development of state-sponsored systems that would facilitate the school-to-work transition of American youth. The framework under current consideration calls for states to develop plans that will include marketing strategies to build consensus and support for state action; establish necessary administrative structures; create broad-based partnerships involving employers, educators, organized labor, and others; and promote the active involvement of business. While engaged in planning, states would also support local site development, develop procedures for issuing skill certificates, design challenging curricula, and develop labor market information. States that receive implementation grants under the federal initiative could use federal funds to recruit and assist employers, promote collaboration among key stakeholders, provide training for school and workplace personnel, furnish labor market information, and develop curricula. These states would also develop and implement equity plans, assessment strategies, participant performance standards, plans for coordinating with other education and training programs, and approaches for continuing these activities when federal funds are no longer available.

The experience of the eight grantees under the DOL and CCSSO demonstration programs indicates certain weaknesses in the proposed scenario, however. Although none of these are fatal flaws, they each require attention to bring the proposed development process to successful fruition.

PROBLEMS IN DEVELOPING STATE CAPACITY FOR SYSTEMIC REFORM

As this report and other research have indicated, the eight demonstration states are in many different stages of systems development. On the basis of their early efforts, it appears that states may be hampered in their efforts to promote reform by several factors, including organizational challenges, funding constraints, and limits on available time.

ORGANIZATIONAL CHALLENGES

Despite national and state intentions and rhetoric, only a few leaders in the eight states have clearly and publicly articulated a commitment to systemic change in policies and practices supporting school-to-work transition. This type of commitment is essential to move from the current fragmented array of programs and services to the creation of a comprehensive system in which youth apprenticeship contributes to the successful school-to-work transition of youth.

As this evaluation has shown, American educators, employers, and government policymakers in the eight states studied exhibit a strong inclination to think in terms of programs. Indeed, many factors conspire to make school-to-work capacity building seem to many like the implementation of another program, rather than the development of a system or part of a system. These factors include the current dominant strategy of focusing on pilot-site development, the small number of demonstration sites operating in each of the participating states, the limited number of participant slots available in each site, and the small number of participating employers. Although the eight demonstration states are well positioned to assist in the launching of a program of school-to-work transition, developing new statewide systems will prove much more challenging.

In theory, state-sponsored school-to-work activities are well suited to serve as a bridge between strategies for educational improvement and economic development. Because state government generally plays only a limited role in these two arenas, however, it is difficult for states to forge a clear role at the center of a complex relationship involving business, education, and employment

training. In most places, the state's role in education is stronger and clearer than it is in either business (where the state role has historically been confined largely to regulation) or employment training (where the state typically plays neither a leadership role nor acts as a force in determining labor market demand). Even in education, the state role is overshadowed by the decision-making and operational responsibilities of local school districts. Thus, in each of these areas, state influence must be derived to a greater or lesser degree from the state government's marketing, technical assistance, and funding capabilities and from their ability to develop organizational mechanisms at the state level that can move state policies and bureaucracies in complementary directions. This is a tall order, given the short time frames within which most elected officials operate, the condition of state budgets, and competing special interests.

Although some states have adopted blueprints for new systems, it does not appear that these designs are widely understood at the state or local levels. Nor does it appear that the vision set forth in these designs has been widely accepted. This is particularly obvious with respect to system goals and expected outcomes for students. Without a clear vision, accepted by large numbers of voters and stakeholders, it is unlikely that pilots can grow much beyond a small number of students, schools, and industries. To complicate this challenge, where initiatives are perceived as governor driven, they acquire some immediate visibility; but they may become just another program when the governorship changes hands. Where initiatives have been pursued more informally, they may prove effective in bringing together disparate interests—but they may be unable to penetrate individual bureaucracies or command the political clout needed to fund and institutionalize them over time.

No state seems satisfied with the governance mechanisms it has created to date. In some states, these mechanisms have proved effective in creating a forum for dialogue among individual state agencies and among the public and private sectors. However, most of these newer mechanisms have little real clout over state bureaucracies, funding, or policies, as we have previously indicated. Although some statewide changes have been made as a result of discussions held in these forums, to date the forums have mainly served as vehicles for airing prob-

lems and initiating pilots, rather than as governing bodies. When the initiative is housed in a particular agency, it is often viewed as belonging to that agency; and it is hard to persuade more than a handful of staff in other agencies to buy in or work cooperatively for its success.

FUNDING CONSTRAINTS

State-level fiscal stringencies raise serious questions about the capacity of states and local communities to support new school-to-work systems without new revenues. Seed money from DOL, CCSSO, and other sources has been critically important to states in launching the initiatives described here.¹ The eight states, moreover, have used their grants to leverage other resources at state and local levels; these funds have been mainly "soft" money, however, from sources outside state and local tax revenues. In some instances, state agencies have been able to convince their legislatures to invest state resources in developmental efforts. At the same time, however, the competition for state resources has become fiercer than ever.

Even in states that are increasing overall education budgets, competition for scarce dollars is intense. The introduction of new school-to-work opportunities must compete, for example, with vocal pressures to effect dramatic reform of the base program of K-12 schooling. This reform may entail major changes in curriculum, school organization, teacher recruitment and training, and integration with postsecondary education. Some states are being required to completely revamp their systems for allocating state aid to local districts, at the same time that they are making major changes to educational programs.

Similar pressures apply at local levels. Where localities receive state funds based on attendance or enrollment, they may be unwilling to share students—and hence dollars—with regional vocational schools or community colleges. They may also be reluctant to spend funds on relatively expensive programs such as work-based learning.

The types of capacity building needed to develop and implement new systems of school-to-work transition are costly, especially in terms of professional time. Moreover, redirecting existing resources alone is unlikely to generate the funds required for systemic change.

LIMITS ON AVAILABLE TIME

Every state that has embarked on a school-to-work initiative has found that it is taking more time and is more complex than any of the stakeholders anticipated. Given the disparate parties and interests involved, states have found it difficult simply to launch a few pilots involving a few students each. To implement new systems or change old ones takes time. The complexity of working out lasting governance arrangements, developing widespread consensus for change, and engaging employers on a large scale in providing work-site learning experiences creates serious demands on the time of those involved. Pressures to set performance standards and measure results are strong. Designing and implementing high-quality programs at the local level is equally challenging. The term of office of most elected local, state, and national officials is relatively short, however; and the political life of most national issues is only about two years.

Although federal legislation would add some stability to this situation, it would not lengthen the term of office for key elected officials. Because no governors have left office in any of the demonstration states to date, it is difficult to predict what effect such changes will have on state initiatives. In several states, however, turnover of key personnel has affected implementation.

These challenges do not foreclose the possibility of meaningful steps. As discussed in the next section, the findings of the current evaluation highlight many planning and implementation issues that state and local system developers can address now.

LESSONS FOR CURRENT PROGRAMMING

INCLUSION OF KEY ELEMENTS IN STATE-BASED SCHOOL-TO-WORK TRANSITION SYSTEMS

State policies and strategies in support of effective school-to-work transition systems need to incorporate several central elements, including work-based learning; integration of academic and employment-related instruction; career exploration; and collaboration among secondary schools, employers, and postsecondary institutions. Together, these elements can enrich the quality and relevance of the educational experiences

available to all American youth. Appropriate configurations of learning opportunities vary, however, according to individual students' interests, maturity, and skills. Accordingly, a statewide system for school-to-work transition will meet the needs of the largest number of participants if it offers varied opportunities that embody the elements listed here.

Many opportunities currently being implemented can contribute to such a system. These include youth apprenticeship, Tech Prep, service learning, career academies, restructured vocational education, and cooperative education, among others. Although some states are moving toward development of broad frameworks encompassing many types of opportunities, none of the states examined in this study has both articulated such a design and generated public understanding and support for it.

The development of new school-to-work opportunities can have the greatest impact if it is integrated into broader education reform. Some of the states examined in this study are developing school-to-work transition opportunities within the context of state education reform, but practical links joining the instructional and structural reform of academic schooling and school-to-work transition tend to be weak. Where real integration is occurring, it is marked by an emphasis on the development and use of learning standards, assessment tools that measure the learner's skill in applying knowledge in new contexts, and new instructional techniques (especially applied learning and learning for understanding), along with staff development and school reorganization to support these priorities. Seeing school-to-work instruction as a learning strategy that advances broader reform objectives can create benefits both for school-to-work transition and for the broader education reform process.

Restructured vocational education can be an important part of a school-to-work system. The most recent amendments to the Perkins Act sought to generate comprehensive reforms of vocational education through (1) the integration of vocational education with academic instruction, (2) opportunities for students to learn about all aspects of an industry, and (3) the development and use of performance standards. In many places, youth apprenticeship and other work-based training opportuni-

ties are accelerating the adoption of these priorities in vocational education programs and are helping to open vocational education to new levels of employer involvement. However, rivalry and competition exist between the new initiatives and traditional vocational education in those state agencies and local schools where vocational educators see the new approaches as challenging their existing curricular sequences, employer relations, and student-supervision arrangements.

Although Tech Prep shares many important features with youth apprenticeship, including key assumptions about underlying strategies for effective preparation of the work force, coordination between the two programs is essential. Expansion of Tech Prep and development of youth apprenticeship are proceeding on parallel and sometimes competitive tracks in the eight grantee states. Although some states envision Tech Prep and youth apprenticeship as complementary career pathways for youth, that vision is rarely translated into effective coordination at either the state or local level. The main barriers to coordination are time, turf, control of funding, and the varying pace at which each program is unfolding nationally and locally. A special problem is that many educators responsible for Tech Prep are inexperienced in the types of energetic outreach to employers that are needed in building successful work-based programs. In addition, in some states Tech Prep is primarily focused on developing articulation agreements between secondary and postsecondary institutions; and few changes are being made in the content and strategies of the learning experience itself. A problem that youth apprenticeship and Tech Prep share in many places is that four-year colleges resist accepting course credits earned in instructional programs that involve skill learning in the workplace.

Registered apprenticeship offers a career path for students participating in school-to-work initiatives, and models exist for successful accommodation between these forms of work-based learning. At the state level, turf problems sometimes overwhelm efforts to achieve coordination between youth apprenticeship and the registered-apprenticeship program, although the two are effectively coordinated in some places. A central impediment

has been the use of the term *apprenticeship*. Where coordination is successful, post-high school entry into registered apprenticeship is generally seen as one option among an array of career pathways. In addition, a few states and local sites have strengthened linkages by drawing on their experiences with registered apprenticeship to develop instructional materials for school-aged youth and launch new work-based learning initiatives.

In setting goals for school-to-work transition systems, states need to recognize the desires of parents, teachers, and students to maintain college-enrollment options for young people. Goals that states select for school-to-work systems affect decisions of parents, students, employers, and educators about whether they should participate. Most of the states reviewed in this study have determined that school-to-work transition systems at the secondary-school level should at a minimum prepare students for entry into good jobs, registered apprenticeship, and two-year technical college training. Some stakeholders also want students to be able to enter a four-year college on completion of a school-to-work program. The lack of consensus over college enrollment as a post-program option has created tensions and resistance at some local sites, however, and may prove more troublesome as initiatives try to expand to more sites and students.

MECHANISMS FOR EFFECTIVE GOVERNANCE

Effective state governance requires structures that can forge working relationships among key public stakeholders and secure the implementation of necessary actions and policies by state and local agencies. Three features seem to characterize effective structures for state governance:

- A capability to bring together all the parties whose involvement would contribute to implementation success, which requires the organizing structure to be seen as committed to treating competing interests fairly
- The ability to develop consensus for action among essential state agencies and the leverage to develop the tools, technical assistance, labor market and career information, staff training, legal review, monitoring, grant-making, and other activities necessary

to mount an effective school-to-work transition system throughout the state

- Sufficient prominence to command attention and resources when needed from the governor and legislature

The states reviewed in this study have experimented with a variety of governance and administrative arrangements. While administrative functions are usually housed in an existing agency, the eight states have used interagency agreements, internal steering committees, executive cabinets, consultants, and other arrangements to administer day-to-day operations and resolve the complex array of cross-agency issues that arise. States appear to have been most successful, through the use of advisory committees, in bringing together diverse interests to set criteria for launching local pilots and resolve problems that arise in that process. None of the eight states has yet developed a governance mechanism with authority to affect decision-making in participating agencies or across program lines, however, although several states are adjusting their original governance arrangements to address these objectives.

STATE ACTIONS TO PROMOTE LOCAL CHANGE

State efforts can enhance the development of local school-to-work systems through provision of start-up grants, development of curricula and assessment tools, support for staff development, improvement in guidance and counseling systems, and rationalization of policies spanning secondary and postsecondary schooling. Some states have focused their efforts on starting local pilots; others have concentrated on developing administrative and support capacities to promote systemic reform. In building administrative and support capacities, local sites value hands-on technical assistance, activities to promote networking across sites, help in troubleshooting problems with state agencies, and the development of curriculum and other tools, even though they also want to be able to customize program design elements. Local sites understandably want both start-up grants as well as support services; few of the sample states have had the resources to pursue a comprehensive strategy, however.

The preexisting characteristics of the state-local relationship strongly affect local receptivity to efforts by the

state to promote school-to-work transition systems.

Observers of the states' role in encouraging the local adoption of education-related change have generally concluded that local responses are strongly affected by preexisting state-local relationships. This conclusion is valid in the case of school-to-work transition opportunities, with the added complexity that several state agencies are typically involved in school-to-work transition. These relationships thus involve a large number of parties and hence either a large number of preexisting relationships or a need to build relationships where none has previously existed. Experience in the demonstration states suggests that local adoption can be facilitated by systematic efforts at the state level to cement better working relationships across agencies and among sectors, followed by communication of these relationships to local entities.

State support for curriculum development can contribute to successful local implementation of school-to-work opportunities. In many instances, pressures to plan and implement pilot sites quickly have strained the capacity of programs to approach curriculum development deliberately and thoughtfully; and most current efforts in the eight states of this study are fragmented. State support for creating integrated curriculum frameworks that could guide local curriculum development and implementation would help ensure continuity and quality in instructional approach across the state. To this end, states can support release time for teachers to develop curriculum and work with teachers in other sites. Although some states are developing skill standards, state leaders stress the need for federal assistance in this area.

States can help facilitate effective linkage between secondary and postsecondary institutions. The ease with which a secondary school can develop an articulation agreement with the community or technical college system seems to be related to the comprehensiveness of the state education governance system and state-level support for coordination. Where levels of education are governed by differing state agencies and there is little state support for coordination, secondary schools face a difficult challenge. The relationship with four-year institu-

tions is even more difficult because most colleges and universities will not accept applied academic courses on student transcripts as substitutes for college-prep academics.

More intensive efforts are needed to expand the participation of at-risk youth and young women. Students participating in the state pilots reviewed in this study are generally the cream of the crop among those students not headed for four-year college degrees, according to program administrators. Because of the necessary investment in time and wages, employers want motivated, educated young people who will fit smoothly into the work environment and whose presence will not challenge accepted ways of doing business. Because work-based learning must have strong employer support to develop, program administrators have generally selected for participation only those students who they believe are most likely to succeed in the workplace. Expanding the participation of at-risk youth and young women may require state policies encouraging (1) earlier intervention to introduce all students to potential careers and prepare them for the varied demands of the workplace and (2) more supports for student learners on the job. Both of these techniques, along with efforts to prepare instructors, employers, and workers for receiving at-risk youth and young women, are important strategies for increasing their participation in varied occupational programs. Although states are aware of these issues, only a few of those in this study have taken actions to incorporate these techniques.

STATE ACTIONS TO FACILITATE EMPLOYER INVOLVEMENT

States can play a central role in encouraging employers and employer associations to participate in school-to-work initiatives. Governors and senior officials in several states have personally recruited employers and employer associations to become involved in the design and operation of work-based learning initiatives at state and local levels. At the state level, employers are typically asked to serve on advisory committees and to provide advice in such areas as program design; the development of standards, credentials, and curriculum; and projections of needs for entry-level, career-ladder jobs within

their industries. At the local level, employers are asked to provide structured work-site learning experiences and to select experienced workers to serve as mentors, trainers, and supervisors. They are also often encouraged to serve on steering committees, participate in program design and curriculum development, and recruit other employers. Some states have proposed financial incentives to encourage employer participation in these activities; tax credits or reimbursements to offset some training and supervisory costs are among the strategies most often considered.

Intermediary organizations and other administrative techniques can facilitate involvement of employers in school-to-work transition opportunities. Several states in the eight-state sample are using organizational strategies to increase employer involvement. These strategies respond to an important feature of work-based learning that is especially difficult for educators to implement—outreach to and collaboration with employers. The school/employer relationship is facilitated in some states through intermediary organizations that are committed to the economic development of business and industry and are staffed and equipped to recruit new employers and troubleshoot problems that arise in employers' relationships with schools. Such organizations can include new entities created for this purpose, as well as existing organizations such as trade associations and regional business/industry groups. Some states are also using techniques such as (1) encouraging the designation of program coordinators to facilitate relationships among schools, employers, student learners, and parents; and (2) creating a statewide nonprofit organization to which all participating employers make contributions for payroll, taxes, and insurance premiums, hence relieving employers of this burden.

Although preexisting legal requirements can create barriers to students in the workplace, these problems are resolvable. In some states, concerns about legal issues (e.g., workers' compensation provisions, child labor laws, and immigration restrictions) reportedly have deterred the involvement of employers in work-based learning opportunities. Several states have developed models for resolving these concerns, including the dis-

semination of employer-oriented guidance materials, personalized technical assistance, and the use of intermediary organizations that take over responsibility for ensuring compliance.

DEMONSTRATION PROGRAMS AS A SUPPORT TO SYSTEM DEVELOPMENT

Demonstration programs, such as those sponsored by DOL and CCSSO, can spark varied activities directed toward building statewide systems for the provision of school-to-work opportunities; they are most effective when they involve technical assistance, oversight, and efforts to promote learning among states and localities. These experiences can inform others who are planning such efforts or who are merely considering possibilities. To be useful, however, information and materials from the demonstration sites need to be analyzed and disseminated. Through monitoring and evaluation, states need to be held accountable for the activities funded by national grants. Publication of evaluations is a useful communication strategy. Other strategies include (1) national and regional forums in which state and local administrators can share their experiences with each other and with administrators who are beginning to plan; (2) technical assistance from experts and peers; and (3) the establishment of learning networks linking administrators, local site personnel, and others involved in the development of these opportunities.

¹Although the DOL grants of \$200,000 each were larger than the CCSSO grants, they were still small compared with other federal demonstration grant programs, which sometimes provide \$1 million or more to a single local school system or other local agency over a grant period of two or three years.

REFERENCES

- Berryman, S. E. (1992). Apprenticeship as a paradigm for learning. In J. E. Rosenbaum, D. Stern, M. A. Hamilton, S. E. Hamilton, S. E. Berryman, & R. Kazis (Eds.), *Youth apprenticeship in America: Guidelines for building an effective system* (pp. 25-39). Washington, DC: William T. Grant Foundation Commission on Youth and America's Future.
- California Business Roundtable. (1988). *Restructuring California education*. San Francisco: Author.
- California High School Task Force. (1992). *Second to none: A vision of the new California high school*. Sacramento: California Department of Education.
- Collins, A., Brown, J. S., & Hollum, A. (1991, Winter). Cognitive apprenticeship: Making thinking visible. *American Educator*, 15(3), 6-11, 38-48.
- Commission on the Skills of the American Workforce. (1990). *America's choice: High skills or low wages?* Rochester, NY: National Center on Education and the Economy.
- Fuhrman, S. H., & Malen, B. (Eds.). (1991). *The politics of curriculum and testing*. Philadelphia: Falmer.
- Governor's Commission on a Quality Workforce. (1991, April). *A world class workforce for Wisconsin*. Madison, WI: Author.
- Michigan Department of Education. (1993). *School-to-apprenticeship handbook*. Lansing, MI: Author.
- Michigan Employment Security Commission, Bureau of Research and Statistics. (1993). *Michigan career outlook 2000*. Detroit, MI: Author.
- Michigan Occupational Information Coordinating Committee. (1992). *A counselor's guide to occupational information*. Lansing, MI: Author.
- Michigan Occupational Information Coordinating Committee. (1992). *How do I get from here to there?* Lansing, MI: Author.
- Michigan Occupational Information Coordinating Committee. (1992). *Work-based learning: Bridging the gap from school to work*. Lansing, MI: Author.
- Miller, M. R. (1993, May). *The U.S. registered apprenticeship system: Current efforts and future prospects for meeting the needs of America's youth*. Washington, DC: Federal Committee on Apprenticeship, U.S. Department of Labor.
- Oregon Bureau of Labor and Industries. (1993). *Child labor law and youth apprenticeship programs*. Portland, OR: Author.
- Resnick, L. B. (1987). *Education and learning to think*. Washington, DC: National Academy Press.
- Schmidt, B. J., Finch, C. R., & Faulkner, S. L. (1992, December). *Teachers' roles in the integration of vocational and academic education*. Berkeley, CA: National Center for Research in Vocational Education.
- Wisconsin Department of Industry, Labor, and Human Relations, Division of Workforce Policy and Information. (1993). Detailed industry trends. In *Wisconsin projections 1990-2005: Industries, occupations, and labor force*. Madison, WI: Author.

APPENDIX
STATE SUMMARIES

PROJECT DESCRIPTION

In launching its youth apprenticeship initiative, California has involved employers, educators, and labor representatives to develop a partnership that is linked to education reform and emphasizes industry involvement. The initiative is also closely tied to the state's overall effort to improve secondary education. Two main strategies underlie California's planning for youth apprenticeship: (1) integrating youth apprenticeship activities into existing work-related learning programs; and (2) using a bottom-up, industry-guided approach to pilot development. This approach is intended to give California new opportunities to build on existing models, solidify industry support, and experiment with a variety of implementation efforts.

DETAILS OF YOUTH APPRENTICESHIP MODEL

California planners envision youth apprenticeship as an experience that includes at least two years of high school and one postsecondary year and provides each participant with a broad understanding of an industry's occupational opportunities, as well as targeted job-related knowledge and skills. Courses will integrate academic and technical training; and paid and unpaid workplace learning will be structured, systematic, and supervised. The sequence of learning in high school will move from career-awareness activities, such as speakers and field trips, through unpaid school-year internships, paid employment for one summer, and part-time paid employment while enrolled concurrently in related courses. Employers will help set standards, review curriculum, and participate in certifying students' achievement, in addition to collaborating with labor leaders, educators, and government officials on local project advisory boards. Articulation agreements will ensure that students acquire appropriate credit or advanced standing (or both) from the high schools and postsecondary training institutions involved in youth apprenticeship.

The state's 60 career academies provide the primary foundation on which youth apprenticeship is being built. The academies are schools-within-schools, each enrolling about 150 students in grades 10-12 with instruction organized around an occupational theme. Most academies target at-risk students, and each has strong ties with

an industry, which provides equipment, advice, and jobs for students. Academy graduates are expected to have skills that qualify them for immediate employment and to have achieved sufficient mastery to succeed in postsecondary education.

ROLE IN RELATION TO OTHER SCHOOL-TO-WORK PROGRAMS IN THE STATE

In the system of school-to-work transition that state leaders envision, vocational education, Tech Prep, career academies, and other educational programs would integrate academics and technical training, provide field learning experiences, and promote attainment of high standards of academic and technical knowledge and skill. Within the system, youth apprenticeship programs would be distinguished mostly by the amount of time students spend in workplace learning supervised by industry-based mentors. Much of California's vision for its secondary education system is articulated in *Second to None*, a report prepared by the California High School Task Force in 1992.

Vocational education in California is offered by local school districts and regional centers. Spurred by amendments to the Perkins Act, the state is developing new assessment tools and performance standards for its vocational education clusters—agriculture, business, health, home economics, and industrial technology. These tools and standards stress the integration of academic and vocational learning, increased academic rigor, and exposure to all aspects of an industry.

The federal Tech-Prep funding is shared by the California Department of Education (CDE) and the community college system. CDE, which receives 35 percent of the funds, is using its portion to support six local resource consortia of secondary and postsecondary institutions. The consortia work on curriculum revisions and pilot the assessment and standards material developed as part of the state's vocational education reform efforts. The community college system is also supporting regional consortia, made up of similar partners. Because local community colleges have a high degree of autonomy in California, the goal is to have each campus involved in one of these efforts. The regional consortia are working on articulation agreements between secondary and postsecondary institutions to develop integrated curricula

and address issues of college credit. Some models also involve four-year colleges. The plan is for the resource consortia to work with the regional consortia to promote adoption of materials and practices throughout the secondary and community college system. Implementation strategies are expected to vary widely from site to site.

Registered apprenticeship provides another avenue to employment, one chosen by relatively few of the state's high school graduates, however. The state apprenticeship bureau has no direct links with high schools, although it does provide information to secondary counselors about the registered program. Some local apprenticeship committees have informal connections to secondary schools and regional occupational programs. The local availability of registered apprenticeship slots is largely determined by the occupational outlook in the particular field.

GOVERNANCE STRUCTURE

LEAD AGENCY

The CDE and the elected superintendent took the lead in initiating youth apprenticeship, using the CCSSO grant. When the state received its DOL grant, the governor assigned administrative responsibility for it to the Employment Development Department (EDD); and EDD increased the representation from the community college system. These agencies both use the Youth Apprenticeship Steering Committee to guide the project on a day-to-day basis. As major issues arise, the project director solicits advice from key representatives of CDE, EDD, and the offices of the community college chancellor.

COLLABORATING AGENCIES AND THEIR ROLES

Working relationships among youth apprenticeship, vocational education, Tech Prep, community colleges, and registered apprenticeship are hampered by long-standing perceptions of the missions of the various agencies and by the state's fiscal crisis. Low levels of funding for vocational education at some local sites, for example, have affected scheduling and the amount of occupational instruction and materials available to youth apprentices. Organizational differences also affect interagency cooperation: The state's vocational clusters do not correspond

to most of the projected youth apprenticeship occupations, and thus statewide development of vocational-education assessment tools and curricula may not have immediate applications in most youth apprenticeship projects. Because community colleges have considerable autonomy, agreements must be negotiated institution by institution; and the ability to work out these and other issues varies considerably from site to site. The registered-apprenticeship program is located in the Department of Industrial Relations and is organizationally separate from the Employment Development Department, which administers the DOL grant.

Nevertheless, some progress in collaboration is being made; and working relationships are developing slowly, fostered in part by participation in the statewide steering committee and individual efforts at state and local levels. Vocational instructors are providing school-based skills training to apprentices at local pilot sites. Some health pilots will use the assessment tools and curriculum materials being developed as part of the state's vocational reform and Tech Prep initiatives. (Health is one area where programs in vocational education, community colleges, and youth apprenticeship are linked and some of the most significant collaboration to date has occurred.) The JTPA office within EDD administers the DOL youth apprenticeship grant, and JTPA funds pay for the after-school and summer work of some apprentices in local sites. State JTPA education coordination funds are also being used to help five local JTPA programs put together school-to-work transition projects, although this effort does not appear to be coordinated with the youth apprenticeship initiative. The state apprenticeship director and four union officials serve on the statewide youth apprenticeship steering committee; and the pilot in Riverside was initiated by a local joint apprenticeship committee and, as a result, will be linked to registered apprenticeship.

PRIMARY INTERMEDIARY AGENCY

CDE used part of the CCSSO grant to establish the statewide steering committee, composed of stakeholders from education, labor, industry, and the community college system. Its purpose is to oversee system development in the planning, development, and implementation stages. Consultants serve as staff to the steering commit-

tee, which governs the development effort informally, meeting every other month in Sacramento. This arrangement proved such a productive and open arena for discussion and collaboration among the otherwise occasionally contentious agencies that when EDD subsequently received the DOL grant, it appended its work to the steering committee's agenda. Though this is a less stable governance arrangement than many think ideal, it has functioned effectively under difficult fiscal conditions and has enabled planners to move forward incrementally, making productive use of limited resources. Furthermore, no single agency is viewed as "owning" youth apprenticeship; and all use it as a testing ground for ideas related to larger reforms in education and employment training. Business and education leaders in the state have found this kind of arrangement conducive to success in other joint ventures.

PROJECT IMPLEMENTATION

USE OF DOL AND CCSO GRANTS

State officials used youth apprenticeship funds to set up the steering committee and staff it with qualified, independent consultants who facilitate meetings and implement plans. As of May 1993, the committee had approved grants for programs serving students at three local sites: Pasadena, Sacramento, and Riverside. Pasadena's project is sponsored by the regional printing industry association and Sacramento's by a major area hospital. Riverside's project, started by a local joint apprenticeship committee, focuses on the building trades. Three other health academies are affiliated with the youth apprenticeship project, and staff are working to expand the printing model. In addition, the committee's staff have met with leaders of other industries to explore new occupational themes. Program development is underway in electronics and manufacturing. The steering committee sponsored a successful statewide conference in April 1993 to introduce new pilots, industry supporters, and state officials.

NEXT STEPS

Together, CDE and EDD have achieved or made substantial progress on most of their project goals, although it has taken longer than anticipated to set up individual

pilots. Project staff are collaborating with several agencies and industries on development of high-quality school and work-site curricula, skill standards, and assessment strategies. A U.S. Department of Education grant is supporting the development of four additional printing programs around the state, based on the Pasadena model. State legislation, Senate Bill 781, has been introduced to create a Career Pathways Program governed by a broad-based Workforce Preparation Council. Although the bill appears to represent a consensus among business, education, and project leaders, the future of California's initiative will likely depend on the enactment of federal legislation and the availability of federal dollars.

CHALLENGES TO BE RESOLVED

How can the state coordinate systems at the secondary level? The vision laid out in the high school reform report *Second to None* foresees schools in which vocational education, Tech Prep, career academies, and youth apprenticeship operate as a seamless system, where a distinguishing feature is the amount of time students spend learning in the work site. Through its redesign of vocational education, initiation of Tech Prep, and revision of accreditation procedures, the state has launched reforms designed to bring about systemic change. Further, some local projects have created designs that take advantage of the resources in several available programs and engage their personnel in productive collaboration. Existing programs have used the occasion of new program development to reflect on their own operations and consider strategies to improve effectiveness. Under current arrangements, however, most programs operate independently, often competing for students and resources. They typically criticize each other, defending their own turf and funding assertively; in this vein, some see youth apprenticeship as duplicating existing efforts. Though some business and state government leaders share a vision of education reform, much work remains to be done to integrate this vision into the operations of individual bureaucracies at the state and local level.

How should program design accommodate differences among postsecondary goals? Many parents and educators believe that all high school graduates should

have the skills necessary to attend a four-year college. However, employers often see one- or two-year technical programs as sufficient preparation for most of the vacancies they have to fill, if any training beyond high school is required at all. One of the most contentious issues has been keeping open the option to attend a four-year college. Admission to the university system in California depends on completing certain academic courses; and traditional work experience, applied academics, and vocational courses are not considered college preparatory work. Two strategies can keep the four-year college option open. First, educational institutions affected by a youth apprenticeship program can identify ways to make industry-related courses academically rigorous. Second, the institutions can determine how to certify that students have achieved the academic objectives that entitle them to the kind of credit needed for advanced academic pursuits. It would be helpful if the community colleges could specify the conditions under which advanced standing would be given for courses taken in high school, but local autonomy in making such arrangements prevents a statewide policy.

How can youth apprenticeship be institutionalized?

In the early stages of program development, the informal steering committee and staffing arrangements have served the project well. However, with the passage of time and enactment of federal legislation, pressure will likely increase to find an institutional home for the initiative. Some leaders are interested in setting up a new body that would cut across agency jurisdictions and encourage private sector involvement. One such approach is included in Senate Bill 781. Regardless of where youth apprenticeship is eventually housed, resolving issues surrounding resource allocation and control will take ingenuity and effort.

IOWA: WORK START

PROJECT DESCRIPTION

Iowa views youth apprenticeship as a way to address the needs of the "forgotten half" of high school students—those who do not plan to go on to postsecondary education. The state's program, called Work Start, aims to increase opportunities for high school students to graduate with the skills and knowledge essential for productive employment in career paths that may entail further education. Work Start's agenda includes creating a statewide design that provides incentives and technical assistance to local districts; promoting equity; developing local project committees with representatives from education, industry, and labor; articulating the offerings of secondary and postsecondary institutions; setting up an evaluation process; and winning the support of prospective participants and their communities. Work Start is seen as one of the first steps in implementing the comprehensive program outlined in *Iowa Invests*, an inventory of initiatives related to resource development adopted by the Iowa State Human Development Policy Council in 1992 and signed into law in 1993.

DETAILS OF YOUTH APPRENTICESHIP MODEL

Project officials are using consensus building and analysis of local initiatives to develop a statewide model. The planning process has included eight steps:

- Review youth apprenticeship programs and outcomes in other states
- Establish work groups to recommend components for a Work Start system
- Convene industry-related focus groups to target industries for Work Start projects
- Develop operating rules to guide Work Start
- Involve communities in the development of the Work Start system
- Develop a Request for Proposals based on design requirements
- Award eight \$10,000 challenge grants to local partnerships for project planning
- Provide technical assistance to challenge grant recipients

In 1992, the state passed Work Start legislation that

further defined the program by specifying that it will have two phases—a preparation phase, in which students gain basic and advanced academic skills required for success in their chosen vocation, and a workplace phase, in which students undertake specific training at the work site or the classroom or both. Work Start is also expected to include a postsecondary component and a certificate of initial mastery, which will indicate that a student has achieved certain preset academic standards that will be developed as part of broader education reforms.

ROLE IN RELATION TO OTHER SCHOOL-TO-WORK PROGRAMS IN THE STATE

Work Start and Tech Prep are administered by the Department of Education's Bureau of Vocational and Technical Education, but neither is fully developed yet. Two community colleges have received grants to design Tech Prep models, and they have held a statewide conference to generate interest among other potential institutional sponsors. In 1991, the state legislature enacted laws governing minimum standards and requirements for vocational education. They require every secondary school to provide three sequential units in four of six targeted vocational education service areas: home economics, health occupations, industrial technology, agriculture, business/office, and marketing. Among other purposes, this legislation was designed to help school boards experiment with new strategies for delivering vocational education without losing their accreditation.

GOVERNANCE STRUCTURE

LEAD AGENCY

The Department of Education acts as the fiscal agent of Work Start, employing the project director and convening meetings of the State Agency Steering Committee and the Advisory Committee to provide guidance in program development.

COLLABORATING AGENCIES AND THEIR ROLES

The State Agency Steering Committee, with representatives of the Departments of Economic Development, Employment Services, and Education and the Office of the Governor, coordinates development of the youth

apprenticeship system. This committee selected the Department of Education as the fiscal agent because of its history of productive engagement with school-to-work transition projects. The committee meets weekly, and includes two representatives from Education—one of whom is the project director—and two from Economic Development, two from Employment Services, and one from the Governor's Office. They work primarily on the nuts and bolts of implementation, forging policy and procedures.

The Work Start Advisory Committee, appointed by the governor, assists in selecting local pilot sites and provides input on project design. The Advisory Committee includes five industry representatives, three union leaders, three teachers, two school administrators, one guidance counselor, the director of the Bureau of Apprenticeship and Training, and one student representing a state vocational education organization. The Review Committee, a subgroup of advisors, developed the Request for Work Start Proposals and awarded challenge grants. Among these three working teams, decision-making processes are still being developed.

The state required applicants for challenge grants to show that proposals reflected the interests of planning groups that included business and industry, education, labor, employment and training agencies, parents, and students. Policies require that local projects be managed by committees with similarly representative composition.

PROJECT IMPLEMENTATION

USE OF DOL GRANT

The state used its DOL grant to identify models of youth apprenticeship in occupational areas considered to be potentially successful in Iowa—health, finance, insurance, and construction. This included convening five meetings around the state to introduce businesses to the concept of youth apprenticeship, discuss their work-force needs, and determine how youth apprenticeship might contribute to meeting these needs. The state also held workshops, one in Des Moines and another in the western part of the state, to stimulate applications for the challenge grants; it also planned to offer a technical assistance conference for grantees in the fall of 1993.

NEXT STEPS

Implementing and monitoring the projects launched by the challenge grant recipients and continuing to meet with industry representative will occupy the Steering and Advisory Committees in the near future. As part of their work, Steering Committee members plan to identify and disseminate information about best practices. A few students are to begin workplace learning activities in the fall of 1993.

CHALLENGES TO BE RESOLVED

What is the proper relationship between youth apprenticeship (or Work Start) and registered apprenticeship? Although labor representatives have participated in advisory roles, the relationship between registered apprenticeship and youth apprenticeship remains to be clarified. Union officials question the appropriateness of using the term apprenticeship, puzzle over the limitations of labor's role in program development up to this point, and are not sure how or whether youth apprenticeship will coordinate with registered apprenticeship.

MAINE YOUTH APPRENTICESHIP PROGRAM

PROJECT DESCRIPTION

The goal of the Maine Youth Apprenticeship Program (MYAP) is to add to the state's existing system of career pathways a readily accessible, workplace-based pathway to technically oriented careers. The state's plans reflect the governor's keen appreciation of the German youth apprenticeship model, observed in a study trip arranged for state leaders. MYAP is conceived as a three-year sequence of experiences that might eventually serve as many as 25 percent of Maine's secondary students when it is fully operational.

DETAILS OF YOUTH APPRENTICESHIP MODEL

Once MYAP is fully implemented, students will participate in career-exploration activities in grades 9 and 10, culminating in their application for admission to the MYAP program, which they can begin in grade 11 if they pass the 10th grade gateway assessment. At present, participating 11th and 12th grade students attend regular classes at the high school during the first semester and spend the second semester and summer in paid employment supervised by industry "meisters" and academic support staff. Meisters provide orientation, instruction, supervision, and evaluation of apprentices and work with MYAP staff, school representatives, and MYAP academic instructors to plan and develop a curriculum for their apprentices. They help the apprentices gain the maximum benefits from their workplace learning and arrange experiences that increase understanding of the career field as a whole. During the work semesters, students spend one day a week in applied academics courses with curricula that highlight connections between core subjects and industry issues. For example, in the first pilot program, the 11th grade American history course traced the origins of contemporary policies that shape working conditions. During the third year (i.e., grade 13), students will attend job-related classes at the technical college for 16 weeks and work 34 weeks for their employers, who pay their tuition. At the end of the third year, students will receive a one-year technical college certificate and a certificate of mastery indicating their level of attainment in job-related knowledge and skills, which will have been established based on industry standards.

ROLE IN RELATION TO OTHER SCHOOL-TO-WORK PROGRAMS IN THE STATE

Youth apprenticeship is one of the state's six career pathways available to assist secondary students in entering the work force without first earning a baccalaureate degree. Whereas the youth apprenticeship program is designed mainly to attract students who are academically successful, other pathways offer a range of options for students with lower achievement. The seventh career pathway is a traditional college preparation program followed by a four-year degree program, the choice of about one-fifth of Maine's high schoolers.

Maine has 23 Regional Vocational Technical Centers (RVTCs) offering many occupational preparation programs. Some provide classroom or shop-based training in industries targeted for the creation of youth apprenticeship opportunities. Cooperative education programs are available at the RVTCs and some comprehensive high schools.

Tech Prep was launched two years before youth apprenticeship and is just beginning to implement its first programs. Tech Prep will usually involve two years of study at a technical college after two years of high school career preparation.

Jobs for Maine's Graduates (JMG), funded by JTPA, provides at-risk students in 20 high schools with job-seeking and job-keeping skills. JMG offers 10th and 11th graders classroom-based, hands-on activities related to employability, and 12th graders work with a job specialist on interviewing and resume writing.

Labor unions have a preapprenticeship program at the high school level that articulates with registered apprenticeship. Youth apprenticeship is seen as a compatible adjunct to preapprenticeship.

GOVERNANCE STRUCTURE

LEAD AGENCY

The Maine legislature established the Center for Youth Apprenticeship in May 1992. The Center is governed by a board of directors with state, national, and international representatives of business, education, and labor sectors. A separate policy advisory board, composed of Maine educators, employers, and labor leaders, sets statewide performance standards for apprenticeship

occupations and ensures the credibility of the program's certificate of mastery. For each training area, craft committees with representatives from secondary and postsecondary education, industry, and labor provide detailed input on program standards, content, and curriculum development.

The Center's permanent staff includes a program director, a research and curriculum development director, and two associate directors. Other staff include a student services liaison (on loan from Jobs for Maine's Graduates), a school/workplace coordinator, a business manager, and support staff. In the pilot year, four academic instructors were hired on an adjunct basis to teach the core subjects during participating students' semester of almost-full-time employment. In the future, regular teachers in students' home high schools are expected to provide this instruction.

The Center, housed at Southern Maine Technical College in Portland, guides the statewide implementation of MYAP. As youth apprenticeship expands, the Center will coordinate activities at the six regional campuses of the technical college system (the designated locations for most MYAP services). In addition, Center staff study apprenticeship programs around the nation and the world, develop curriculum, and provide technical assistance to local sites.

The Center for Youth Apprenticeship has incorporated as a 501(c)(3)—nonprofit—and 509(a)(3)—educational—organization to simplify issues related to workers' compensation and tax status. Employers participating in the youth apprenticeship program pay the Center a fee that covers the salary and related costs for each apprentice; and the Center pays the apprentices, an arrangement that those involved find to be practical, fair, and cost effective.

COLLABORATING AGENCIES AND THEIR ROLES

Employers and labor representatives serve on advisory boards for the Center for Youth Apprenticeship and local projects. They send staff for formal training in supervising youth apprentices. Faculty from the technical college and university systems are invited to participate whenever appropriate.

PROJECT IMPLEMENTATION

USE OF DOL AND CCSSO GRANTS

The DOL and CCSSO grants, in combination with funding from JTPA, the Maine Occupational Information Coordinating Committee, and the Maine Health Occupations Training Program, have been used to support start-up activities for the Center and one youth apprenticeship pilot site. In 1992-93, the MYAP site in the Portland area received 22 student applications and placed a total of 15 apprentices in the machine tool, insurance, and health care industries.

NEXT STEPS

The Center's original goal was to reach 50 percent of the state's public schools and 100 percent of the 26 Regional Vocational Technical Centers by May 1994. A year of experience has caused the MYAP leadership to scale back this expectation to a slower rate of expansion. The program is committed to placing 150 youth apprentices in 1993-94. Advisory boards continue to work on state certification standards for industry-related competencies, as well as achievement standards for the five core academic subjects. Concentrating on developing apprenticeship slots and placing students in them has diverted attention from plans for career-exploration programs at the 9th and 10th grade levels. These plans have not yet been made.

CHALLENGES TO BE RESOLVED

Where will MYAP fit on the map of career pathways?

Because the impetus for youth apprenticeship arose in the governor's office and direction now emanates from the Center for Youth Apprenticeship in South Portland, MYAP has initially been more top-down than other components of the school-to-work transition system. At this stage, youth apprenticeship is not developed sufficiently to determine how well it will fit in with other career pathways or whether agencies whose work bears on the youth apprenticeship mission will view it as a complement or a challenge to their own missions.

MICHIGAN: YOUTH APPRENTICESHIP PROJECT

PROJECT DESCRIPTION

Michigan leaders envision youth apprenticeship programs within an array of career preparation opportunities offered through the public schools. Actual design of programs is left up to local sites; but most build on the state's strong tradition of registered apprenticeship. The aim of the state's current initiatives is to develop broad-based consensus on a definition of youth apprenticeship experiences, create a network among local sites, and provide the technical assistance necessary to launch new sites.

DETAILS OF YOUTH APPRENTICESHIP MODEL

In keeping with its tradition of local control of education, the state deliberately chose to foster development of a wide range of local project models, rather than limit itself to a single statewide plan. The language of the Request for Proposals for start-up funds to local sites gave priority to proposed projects having six characteristics considered essential for success:

- Academic instruction that leads to attainment of state educational standards
- A planned program of structured work-based learning that promotes development of occupation-specific knowledge and skills
- Job experience that includes a paid, part-time position and guidance from a work-site mentor
- An agreement that formalizes the commitment of students, parents, employers, labor organizations, and schools that are involved in the project to ensuring its success and that specifies what credentials may be earned, what wages will be paid, when work will be scheduled, and how the project may be modified
- Formal career counseling for students that explains postsecondary options and provides individual assessment related to making a career choice
- Support from affected educational institutions, employers, labor organizations, and employment-training agencies and, in the case of postsecondary institutions, detailed policies related to articulation

ROLE IN RELATION TO OTHER SCHOOL-TO-WORK PROGRAMS IN THE STATE

As part of the initial program development, a state-level, work group engaged in extensive discussions that led to a document titled *Models for Michigan*. This document sketches roles, relationships, and experiences that are or could be provided from kindergarten through adulthood and that lead to productive employment. The programs cluster around points in a developmental continuum, from career awareness through youth apprenticeships and registered apprenticeships. Career awareness activities begin as early as kindergarten and continue over several years. Some exploratory apprenticeships may include a work-site learning component, as well as school-based vocational education and cooperative education courses. Youth apprenticeships may also include (1) employer-certified internships that involve paid employment and training to industry standards, (2) preapprenticeships that may be articulated with community college courses, and (3) school-to-apprenticeships that contribute to high school graduation. Under this design, school-based and work-based learning in any of these intermediate programs may be articulated, as appropriate, with registered apprenticeship programs.

In at least two of the state's pilot sites, systems like that described in *Models for Michigan* provide secondary students with a menu of school-to-work transition options based on both new and traditional options. These two sites have strong support from the registered-apprenticeship community, as well as from secondary and postsecondary vocational educators. In Michigan, local sites conduct their own negotiations with registered apprenticeship representatives and community colleges, a practice that leads to considerable diversity in local arrangements. In general, the vocational education community is quite supportive of youth apprenticeships and participates in cooperative planning.

The Michigan Occupational Information Coordinating Committee (MOICC, formerly in the state's labor department) and the Michigan Occupational Information System (MOIS, formerly in the state's education department) have developed career information data bases that are available to individuals and institu-

tions. In 1992, MOICC published a pair of guides to work-based learning programs, including youth apprenticeships: *Bridging the Gap from School to Work* is written for counselors, parents, teachers, and other adults; and *How Do I Get There from Here* is aimed at students. With its CCSSO planning grant, the Michigan Department of Education developed and published a school-to-apprenticeship handbook, intended as a guide for starting a youth apprenticeship system in Michigan.

In addition, MOICC published *A Counselor's Guide to Occupational Information* (1992) for guidance counselors who may be more familiar with college admissions than career options. The MOIS system includes an interest inventory matched to careers; resource files on careers; and information on schools, training sites, and student financial aid. MOICC and MOIS are currently overseen by the Governor's Workforce Commission.

GOVERNANCE STRUCTURE

LEAD AGENCY

Responsibility for developing a youth apprenticeship system in Michigan now resides with the Governor's Workforce Commission, which reports to the governor and the Michigan Jobs Commission. The governor created both commissions in 1993 to operate for two years, although they are expected to continue as executive-branch agencies beyond this period. The youth apprenticeship project director is the Vice President for Workforce Development on the Workforce Commission. The Workforce Commission gathered up work-force development programs originally managed by other departments (e.g., Labor, Education, Commerce, Social Services, and Corrections) to improve coordination across programs. It oversees JTPA, JOBS, MOIS, state Head Start programs, the Community Service Block Grant, and several other programs. The commission does not have responsibility for or direct access to funding from federal or state K-12 education programs at any level, including vocational education. State-level youth apprenticeship planners emphasize that Michigan does not intend to create a new bureaucracy; instead, it will facilitate development of a network and then bow out.

COLLABORATING AGENCIES AND THEIR ROLES

As part of the initial program development, the youth apprenticeship project director convened two stakeholder groups that could become significant supports for program expansion. The State Interagency Strategic Planning Group, which was formed as the result of an agreement between the heads of the Departments of Labor and Education, includes senior staff from both agencies. Its goal is to develop a unified state plan for youth apprenticeship experiences. Ultimately, the group expects to develop an employers' guide, an implementation guide, a marketing plans for recruiting students and employers, definitions of measurable outcomes, and an evaluation methodology.

The State Youth Apprenticeship Work Group includes representatives of the U.S. Department of Labor's Bureau of Apprenticeship and Training, the Building and Construction Trades Council, the United Auto Workers, and the community colleges. It has focused on the relationship between the adult registered-apprenticeship system and youth apprenticeship. Members of this group have reached consensus on the elements of a career-opportunities system and drafted *Models for Michigan*, noted earlier, which is now under review before adoption as a policy guide.

PROJECT IMPLEMENTATION

USE OF DOL GRANT

Michigan invested most of its DOL award in competitive challenge grants to develop, implement, and expand local youth apprenticeship initiatives. (Five counties had youth apprenticeship programs in place, and two of these were well developed.) Ten grants, averaging about \$15,000, were awarded in January 1993; eight were to start new projects, and two were to expand and enrich existing projects. Because almost 50 proposals were submitted, and many were of high quality, the state department of education funded several additional sites with FY 1993 Perkins Act funds. The grant-making process prompted the spread of youth apprenticeship projects across the state; previously initiatives had been concentrated in the western region.

NEXT STEPS

The state will continue to provide technical assistance to new sites and support student recruitment by disseminating occupational information to students, parents, and guidance counselors. The state-level interagency planning group and the youth apprenticeship work group will continue discussions of policies and frameworks that—in the words of one informant—may turn the “crazy quilt of local programs into the tapestry of a statewide system” without adding significantly to the state bureaucracy.

CHALLENGES TO BE RESOLVED

How can the state provide support for an effective network without encroaching on the autonomy of local projects? Michigan’s reputation as a state where local control of education predominates is actually codified. By law, the state must pay for any programs or reforms that are mandated. Given the current state budget limits, support for new mandates—including school-to-work transition programs—is unlikely. The state-initiated interagency discussions and networking of local sites are important first steps in creating a statewide school-to-work system. However, it is unclear what the state’s next step can be, beyond providing moral support for local activities. Issues that need to be addressed include (1) access and equity in the provision of youth apprenticeship opportunities and (2) the effectiveness of local pilot projects.

Which institution will develop and offer the applied academics and integrated courses? A consensus is building in support of the position that learning of academic content should be integrated with workplace learning. However, in many areas of Michigan, vocational and technical instruction is offered through shared-time intermediate districts or vocational education consortia during half of the school day, while regular high schools provide academics at different sites during the other half. To the extent that youth apprenticeship experiences are based in intermediate organizations, separation of

responsibility for these two curriculum clusters—which has been thought to be an efficient strategy—may restrict the extent to which youth apprenticeship and other programs that rely on workplace learning can use students’ interest and engagement in occupational education to extend their competence in academics.

OREGON: YOUTH APPRENTICESHIP PILOT PROGRAM

PROGRAM DESCRIPTION

Oregon's youth apprenticeship program—part of a high-skills, high-wages economic strategy—is intended to encourage high school graduation, revitalize vocational education and community college programs, and make early employment after high school graduation more productive. Educators view youth apprenticeship as an essential component of comprehensive school reform aimed at promoting the attainment of world-class standards.

DETAILS OF YOUTH APPRENTICESHIP MODEL

To take advantage of existing organizational structures, youth apprenticeship in Oregon is implemented by the registered-apprenticeship system in conjunction with the secondary-school system. Seven regional apprenticeship offices and the youth apprenticeship unit of the state's Bureau of Labor and Industries (BOLI) develop youth apprenticeship slots, in collaboration with local apprenticeship committees and high schools. Local committees, composed of employers and workers, exercise jurisdiction over each area of training and govern the identification, registration, and selection of employers and apprentices. Youth apprentices join registered apprentices in industry-related training classes, usually offered at community colleges in the evening, in addition to participating in their high school classes. Youth apprenticeship is intended as a two-year experience that students begin in 11th grade. When other components of youth apprenticeship and broader education reform are fully implemented, the plan is that all apprentices will have completed a career-exploration course and passed a 10th grade gateway examination, earning a "certificate of initial mastery," before beginning their apprenticeship assignment. Employers currently receive a dollar-for-dollar state tax credit for wages up to \$2,500 per youth apprentice in the first year, but new legislation will provide instead for the choice of direct reimbursement for employer costs or vouchers of equivalent value for employees' training at approved institutions.

Applicants must be at least 16 years old and enrolled in a professional/technical education program in high school. As apprentices, they earn 80 percent of the initial registered apprentice wage and may work up to 20

hours per week during the school year (44 hours per week in the summer). Criteria for student eligibility vary from school to school; and in the first pilots, highly qualified applicants were recruited, due to competition for youth apprenticeship training slots. Apprentices receive three kinds of credit: (1) high school credit for work-based learning; (2) community college credit for required, related training; and (3) advanced standing in the registered apprenticeship program for experience and skills acquired as a youth apprentice. Industry-related training courses can be applied toward requirements for registered adult apprenticeships.

ROLE IN RELATION TO OTHER SCHOOL-TO-WORK PROGRAMS IN THE STATE

Youth apprenticeship is planned to be an integral part of a system of school-to-work and occupational training programs. High school students will take career-exploration courses in the 9th or 10th grade, and then apply for one of several programs—cooperative education, Tech Prep, youth apprenticeship, college preparation, or some combination. Secondary professional/technical education programs and community colleges offer technical training, and JTPA programs provide additional support for at-risk students.

GOVERNANCE STRUCTURE

LEAD AGENCY

BOLI serves as the lead agency for youth apprenticeship, together with the Department of Education (DOE). The Oregon State Apprenticeship and Training Council is made up of employers, workers, union officials, and the general public, representing a variety of trades and viewpoints. The Council establishes policies regarding safety, accreditation, and supervision of apprentices. The two BOLI staff members supported under the DOL grant devote most of their time to responding to questions about child-labor-law issues and making presentations on youth apprenticeship. Local project responsibilities were added to the workloads of the seven regional offices that manage the registered-apprenticeship programs. DOE has focused on developing curriculum for the career-preparation course, which is intended to link education reform and work-force quality agendas.

One DOE staff member works full time on workplace learning programs, including youth apprenticeship.

COLLABORATING AGENCIES AND THEIR ROLES

The Workforce Quality Council, appointed by the governor, brings representatives of government, business, and labor (including the Oregon State Apprenticeship and Training Council) together to coordinate existing employment and training programs, support school restructuring, promote professional and technical education, and raise community awareness about labor and education issues.

Other agencies contribute to youth apprenticeship development. High schools coordinate academic and work-based learning, evaluate students' progress, and provide credit toward high school completion. They organize youth apprenticeship placements through existing vocational education programs.

PROJECT IMPLEMENTATION

USE OF DOL GRANT

DOE used most of its share of the youth apprenticeship grant to develop a career-preparation curriculum. Teachers from three education-reform pilot schools, BOLI apprenticeship representatives, employers, and others worked together to create an outcome-based, occupationally relevant curriculum suitable for use by professional/technical teachers.

BOLI placed the first youth apprentice in 1992; as of April 1993, six students in five high schools were enrolled in apprenticeships in three regions. Records show that 41 placement opportunities with 37 employers are potentially available in occupations such as sheetmetal work, cooking, baking, shipbuilding, carpentry, auto mechanics, and electrical repair; arrangements to assign students to the placements are underway. BOLI has published a booklet that explains the application of child labor laws to youth apprenticeship.

NEXT STEPS

State officials had planned to have 100 youth apprentices complete the pilot version of the career preparation course and placed in apprenticeships by June 1993. Developing outcome-based assessments for students and

piloting systemic reform at six schools around the state were other goals. BOLI estimates that constructing the youth apprenticeship network necessary to support the original plans will take two more years.

CHALLENGES TO BE RESOLVED

What are the appropriate roles for labor and education? Adding youth apprenticeship to the workload of the team already accustomed to serving registered apprenticeships appears to be an efficient use of existing resources and networks in Oregon. As one apprenticeship consultant put it, "I'm not talking to strangers when I meet with employers about youth apprenticeship." However, association with registered apprenticeship raises a few questions. One community leader pointed out that since nonunion business represents about 75 percent of the employers in the state, the perception of union domination of apprenticeships discourages interest among nonunion employers. In addition, existing apprenticeship systems—consultants and committees—are said to be already heavily burdened. Further, the current registered-apprenticeship system offers only about one-eighth of the apprenticeable trades, providing a more limited base than may be needed. Skilled workers are said to fear inundation of the tight market by youth apprentices with minimal training and lower pay expectations. Finally, as in other states, those developing programs that are still working out problems related to child labor laws and negotiated agreements are fearful of the oversight of BOLI, which is also the state's enforcement division for child labor laws.

PENNSYLVANIA YOUTH APPRENTICESHIP PROGRAM

PROJECT DESCRIPTION

The Pennsylvania Youth Apprenticeship Program (PYAP) is intended to bring business and educational institutions together to develop qualified technical workers who demonstrate the academic and occupational skills to participate productively in a high-performance work organization. Four principles guide local program design:

- Using the workplace as a learning center and integrating school with work
- Measuring learning in terms of common proficiency standards
- Emphasizing technical flexibility, critical thinking, and "learning to learn" skills
- Integrating secondary and postsecondary credentials

This conception of youth apprenticeship arises from a desire to revitalize Pennsylvania's economic base, especially manufacturing, a goal that drives decisions about school-to-work transition policies, governance structures, and educational approaches. According to Pennsylvania educators and employers, youth apprenticeship is a particularly effective strategy for serving the broad middle band of students who are mature enough to function well in an industrial environment and proficient in academic and occupational skills.

DETAILS OF YOUTH APPRENTICESHIP MODEL

Based on six demonstration sites around the state (supported by an earlier DOL grant), Pennsylvania has developed a program model with several defined components. Project managers, local business people, and guidance counselors recruit students into the youth apprenticeship program by describing it to the coordinating counselors in the participating high schools or, in some cases, to 10th grade classes. After a follow-up orientation session, to which employers and parents are also invited, the high school counselors then disseminate information to interested students and help them prepare applications. Applicants and their parents visit the school or local business for informational sessions, during which applicants are interviewed by youth apprenticeship staff; and parents learn how the program prepares

students for work without canceling the option of post-secondary education.

Eligible applicants must have completed 10th grade and earned a passing grade in Algebra I, reached the age of 16, and interviewed successfully with a sponsoring employer. Students may interview with several companies before they secure a training position. Once selected, youth apprentices spend three days a week receiving academic instruction in English, math, science, and social studies; and they also receive apprenticeship-related vocational instruction. As much as possible, their coursework draws on their workplace experiences as a source of learning applications and extensions of academic content. Two days a week, youth apprentices work full shifts for their employers. Their workplace training follows a structured plan that is developed by participating employers. Before entering the work site, student apprentices participate in a two- to six-week orientation program that includes job readiness, team building, and safety training.

Once in the workplace, each youth apprentice has a mentor who acts as a resource in every aspect of working life, including the apprentice's assignments with other people in the company. Apprentices rotate through virtually all parts of the company's operations, receiving immediate feedback on performance and graduating to more demanding tasks as quickly as their developing competence permits. Mentors watch in particular for evidence of initiative and informed problem-solving, which is rewarded with greater responsibility. Apprentices work sometimes in teams and sometimes alone, to cultivate a range of skills. Some employers hire youth apprentices to work full time during the summer in assignments that extend school-year learning.

Each youth apprenticeship program site has a stakeholders' group, composed mainly of employers, that meets every month or so to advise on curriculum design and recruitment of students and employers. Many PYAP projects are operated at Area Vocational Technical Schools (AVTS), to take advantage of existing staff and facilities; and they use project funds for supplementary services and activities (such as providing 11th grade academic classes) not normally covered by AVTS budgets. Other PYAP projects are operated in comprehensive high schools, and one operates at a community college.

Because a study several years ago identified an adequate supply of metalworkers as a critical component in rebuilding the state's sagging industrial base, most of the initial youth apprenticeships were in metalworking. However, new projects focus on a broader manufacturing cluster and on the allied health professions. State officials envision that when fully developed, the youth apprenticeship system will serve 5,000 to 10,000 students a year.

ROLE IN RELATION TO OTHER SCHOOL-TO-WORK PROGRAMS IN THE STATE

Pennsylvania's secondary students have several options in the school-to-work transition system, in addition to traditional college preparation programs. The most prominent among the options are the regular programs of the AVTSs, which enroll about 265,000 youth and adults a year. Generally, high school students attend vocational classes at the AVTSs in the 12th grade, after completing all academic requirements for graduation; during their period of enrollment, they may study English either at their home high school or at the AVTS. (Fourteen of the state's 83 AVTSs are comprehensive centers that offer academics on site beginning in the 10th grade.) Senior personnel of the state Department of Education's Bureau of Vocational and Technical Education referred to youth apprenticeship as a "higher-order program," in comparison to vocational education.

Tech Prep, housed in the Bureau of Vocational and Technical Education and managed by two full-time coordinators, will include programs in 254 high schools in 54 counties. Because Tech Prep is still new, distinctions between it and youth apprenticeship are not yet clear cut. At one site at least, they appear to be the same. Local school administrators are planning to combine Tech Prep students with youth apprentices in the classroom to take advantage of the new project-based curriculum that has been developed for the youth apprenticeship program.

GOVERNANCE STRUCTURE

LEAD AGENCY

The program is a partnership activity of the Pennsylvania Departments of Education, Commerce, and

Labor and Industry, with Education as the current lead agency. The secretaries of all three departments have been active participants in PYAP planning. Day-to-day management is overseen by a project manager, who has been supported by both private and federal funding. In the fall of 1993, she assumes the title of the Secretary of Education's Special Assistant for Youth Apprenticeship. Because this program is still in development, the secretary believes it is important to keep the focus at the department level to reduce the potential for becoming mired in government bureaucracy. Monthly meetings are planned with all three departments to ensure that all available resources at the state and local levels are used efficiently.

COLLABORATING AGENCIES AND THEIR ROLES

At the regional level, youth apprenticeship projects are linked to the state's Commerce Department through the operations of the Industrial Resource Centers (see the next section) and Ben Franklin Centers. Ben Franklin Centers provide assistance to businesses in research and development—sometimes in partnership with universities—as well as technology transfer and entrepreneurial training. The State Apprenticeship Council assisted in reviewing local proposals for state grants, but otherwise it has had limited involvement in PYAP.

PRIMARY INTERMEDIARY AGENCY

Youth apprenticeship in Pennsylvania relies on state-supported Industrial Resource Centers (IRCs) to integrate the goals and resources of secondary high schools and technical/vocational schools with those of area employers. The primary mission of IRCs is to help manufacturers to identify, learn about, and adopt modern production techniques; and the centers have become an important component of the youth apprenticeship governance structure. They have easy access to employers in their respective regions and use this access in part to sell youth apprenticeship. Each IRC has a PYAP project manager whose time is devoted solely to the youth apprenticeship program. Program managers monitor operations and provide troubleshooting assistance that maintains employers' satisfaction with the program. They also work closely with school personnel to ensure that school-based learning addresses work-site needs.

PROJECT IMPLEMENTATION

USE OF CCSSO GRANT

At the end of the 1992-93 school year, six PYAP projects had placed 100 apprentices with 79 employers. Building on this achievement, the Education Department used its CCSSO grant to hold a series of informational conferences around the state; the purposes of the conferences were to stimulate the interest of educators and employers in youth apprenticeship and to announce the availability of three-year, \$90,000 grants to start new projects.

A second round of nine new projects received state grants in April 1993. The state provided new sites with week-long workshops that focused on all aspects of implementation and with professional development opportunities for teachers who will work in youth apprenticeship projects. PYAP has also developed an 11th and 12th grade curriculum guide in collaboration with the Learning Research and Development Center at the University of Pittsburgh and used technical assistance provided by JFE.

NEXT STEPS

The Secretary of Education views development of outcome standards as a high priority, because they will enable educators to make certain that youth apprenticeship generates knowledge and skills that transfer to new work settings and meet community expectations. The state director also identified student assessment as an area needing exploration and development and sees a need for networking among program implementers to facilitate learning about effective strategies and general problem solving.

CHALLENGES TO BE RESOLVED

How long should students be away from home high schools, and who should pay their educational expenses? If the local stakeholders agree that an AVTS is the appropriate school to host the youth apprenticeship initiative, participants' home schools must buy into the addition of academic staff to the AVTS. Ordinarily, students leave their home high schools only during their senior year for vocational education, and then only for part of the year or the school day, because most AVTSs

do not offer the academic courses seniors may need to graduate. Some high schools are reluctant to participate in a program that requires them to give up students full-time for two whole years, as PYAP does. Further, districts' contribution for youth apprentices' enrollment in AVTSs has not covered the cost of providing academic instruction, because for the most part students receive such instruction at their home high school. State start-up grants now help to subsidize the extra costs of providing academic classes for 11th graders at AVTSs; but when the grants expire, local funds will need to be found to cover these costs.

What is the best relationship between youth apprenticeship and registered apprenticeship? Local employers and educators expect that students completing a youth apprenticeship will be credited for equivalent training and experience if they are admitted after graduation to a registered apprenticeship. They expect to make these decisions on a case-by-case basis. However, the State Apprenticeship Council advocates adoption of a statewide policy about the amount of youth apprenticeship credit that can be applied to registered-apprenticeship programs. With a current enrollment of only 100 youth apprentices, compared with about 12,500 registered apprentices statewide, the issue is currently a low priority. Should youth apprenticeship expand to its full anticipated capacity of 5,000 to 10,000, stakeholders will need to decide whether a statewide policy is appropriate.

WEST VIRGINIA: NEW CAREER PATHS THROUGH REGISTERED YOUTH APPRENTICESHIP

PROGRAM DESCRIPTION

West Virginia's youth apprenticeship program is part of a broad plan for a statewide system supporting school-to-work transition. The system will provide each student, beginning as early as middle school, with career information and exposure, opportunities for service learning, and occupational training. It will provide a continuum of opportunities that encourages student choice and keeps open the option of higher education, as well as direct entry into full-time employment. Youth apprenticeship in West Virginia is a component of the registered-apprenticeship program; after high school graduation, participants continue in the adult apprenticeship program to earn certification at the journeyman level. The state chose this framework because its registered-apprenticeship program is large and active, and employers throughout the state are familiar with requirements for serving as a training agent.

DETAILS OF YOUTH APPRENTICESHIP MODEL

The development of youth apprenticeship and Tech Prep Associate Degree programs is part of a strategy that aims to eliminate the "general" track in high school and provide an array of options to middle and high school students that enables them to earn advanced placement in their postsecondary employment or education choice. Under this strategy, middle school students will learn about many types of careers through classroom activities and projects in the community. In high school, 9th grade students will participate in job shadowing to learn about the nature of work in fields of interest to them. In 10th, 11th, and 12th grades, students will choose among opportunities for service learning, mentorships, and internships. In addition, 11th and 12th graders will have options that include youth apprenticeship, construed as an alternative within Tech Prep. However, youth apprenticeship slots will also include fields other than those served by Tech Prep.

As youth apprenticeship is currently being implemented in West Virginia, a school-based selection committee that includes counselors, cooperative education coordinators, technical teachers, and vocational directors nominates three candidates for each apprenticeship slot. Candidates for youth apprenticeship must have earned a

grade-point average of at least 2.5, including completion of Algebra I with a grade of C or higher; successfully completed one semester of technical training related to the apprenticeship; missed school no more than eight days the preceding school year; and expressed commitment to continue training beyond high school.

Employers then test and interview the nominees and make the final selection. Student apprentices earn the same as other apprentices within the same occupational areas.

To a certain extent, access to youth apprenticeship slots depends on students' prior involvement in vocational education, because openings may be first announced through presentations to particular groups. For example, a union representative may describe registered youth apprenticeship opportunities when making a visit to a vocational class. In some cases, promising students with marginal qualifications on paper may gain access through the assistance of interested teachers, who coach them for exams and interviews. Though youth apprenticeship is not viewed as a program serving primarily high-risk students, some administrators report that it retains sufficient flexibility to accommodate students with below-average records.

Education and registered-apprenticeship officials use a variety of approaches to encourage employer participation. They have appeared on a local television talk show to explain the program. They send letters to agencies whose missions might include support for youth apprenticeship. At the local level, one administrator sent a letter of invitation to almost every business listed in the Yellow Pages. Employers who are not already part of the registered-apprenticeship system are invited to take part in the youth apprenticeship program. Specific promotional materials for use by cooperative education coordinators have been developed to recruit new employers to youth apprenticeship and Tech Prep.

To support program development, state leaders have recruited experienced cooperative education faculty to bring their expertise to the new program. According to one administrator, this group "has it down pat—developing work sites, setting standards, and all the rest." The co-op teachers themselves agree that extending their work to include youth apprentices poses no problem. In addition, state officials have conducted a series of work-

shops, conferences, and presentations to raise the awareness of counselors and teachers about the potential benefits of youth apprenticeship for many types of students.

ROLE IN RELATION TO OTHER SCHOOL-TO-WORK PROGRAMS IN THE STATE

Registered youth apprenticeship is one of four school-to-work transition opportunities available to high school students. The others are Tech Prep, cooperative education, and mentorships. The Tech Prep program is operated in conjunction with the community college system and will include an applied academics component, although this is not yet fully developed statewide. Tech Prep has targeted business, electronics, and culinary arts; and it emphasizes broad, rather than job-specific, training. In certain fields, students can be enrolled in both youth apprenticeship and Tech Prep through graduation, at which point they can choose to continue the apprenticeship and the Tech Prep Associate Degree (TPAD) or complete a separate associate degree program in community college. High school students can earn up to 43 credits that can be applied to the 64 credits required for the Occupational Development Applied Associate Degree, through an articulation agreement with the community college system.

The youth apprenticeship program builds on foundations laid by cooperative education and the registered-apprenticeship program. Cooperative education provides broad exposure to a career area (in West Virginia, the most popular area is retail sales), and many believe it can function as a preparatory experience for youth apprenticeship, both for the students and the employers. The registered-apprenticeship program enables students to follow through on their commitment to a high-skilled area of training. The program is employer driven; and once students are accepted in the registered youth apprenticeship program, they enjoy the rights and responsibilities of employees.

Students enter a registered youth apprenticeship in the 11th or 12th grade; after high school graduation, they continue training, which includes both on-the-job and classroom learning.

GOVERNANCE STRUCTURE

LEAD AGENCY

The West Virginia representative of the U.S. Department of Labor Bureau of Apprenticeship and Training (DOL/BAT) and the West Virginia Department of Education (DOE) Division of Technical and Adult Education Services have developed an agreement that details the responsibilities of each in work-force development in general and youth apprenticeship in particular. DOE agreed to make available its networks of technical and adult learning centers to support apprenticeship programs, help with curriculum development and dissemination, and coordinate its related programs to support apprenticeship. DOL/BAT agreed to provide technical coordination and assistance, share information about employer needs and labor market trends, refer employers to existing technical training programs, and award registered-apprenticeship credit for comparable youth apprenticeship achievement.

COLLABORATING AGENCIES AND THEIR ROLES

The Joint Apprenticeship and Training Advisory Council (JATAC), a statewide group composed of representatives from industry, organized labor, trainers, DOE, and others, serves as a steering committee for DOL/BAT on apprenticeship operations. It provides a forum in which state officials promote the youth apprenticeship program and receive feedback from all stakeholders. During the design phase of the registered youth apprenticeship program, JATAC reviewed documents and policies and offered suggestions on issues such as apprentice-selection procedures and quality control.

The Youth Apprenticeship Development Committee, a small working group of state officials with direct interest in youth apprenticeship, has also participated by proposing policies for consideration by JATAC and by DOE and DOL/BAT staff.

The Joint Commission for Vocational-Technical-Occupational Education was created in 1989 to oversee work-force education programs in the state. The 13 members of this governor-appointed super-council manage the state's federal vocational education funds and mediate disagreements among educational agencies about school-to-work transition programs. The

Commission shaped the Tech Prep program criteria, conducted the Tech Prep grant competition, and facilitated development of articulation agreements between secondary and postsecondary institutions.

PROJECT IMPLEMENTATION

USE OF CCSSO GRANT

Program officials have made substantial progress in all four areas of planned activity. First, they have conducted training sessions for educators, employers, and others potentially involved in the program of registered youth apprenticeships. Because the program is voluntary and somewhat experimental, the officials have made a priority of raising awareness and lowering fears. Second, they have developed 35 youth apprenticeship slots. All are anticipated to be filled during the 1993-94 school year. Third, development, testing, and revision of informational and instructional materials on registered youth apprenticeship are proceeding systematically. Appalachia Educational Laboratory is evaluating the materials; and its feedback, coupled with the results of field testing, are being incorporated into revisions. Fourth, counseling and instructional activities for students in grades 7-10 have been planned and materials developed to implement state-approved learning objectives for career exploration and developmental guidance.

NEXT STEPS

A central strategy for implementing the state's registered youth apprenticeship program is to take advantage of resources and services that are already in place. Further training and release time to work with industry would enable teachers to develop new models of cooperative education, mentoring, internships, and applied academics. Addition of more staff to participating DOL/BAT and DOE divisions will be needed to implement the program on the scale envisioned. A more active focus on career awareness and development must be brought to the middle school level, to ensure qualified applicant pools. To address a need to achieve diversity in youth participants, an aggressive recruitment plan to attract more minority and female participation has been implemented.

CHALLENGES TO BE RESOLVED

How can teacher workloads be structured to accommodate supervision? The one area of the state's secondary education policy that has not meshed well with youth apprenticeship involves crediting teachers for their work with apprentices. According to a state official, faculty were reluctant to participate in the program for fear of increasing their workload without any offsetting decrease in their previously assigned duties. Faculty were concerned that they would not receive credit or release time for coordinating youth apprenticeship placements, and so have not volunteered to participate in the numbers that will be needed to develop and implement youth apprenticeship fully. Recognizing this problem, DOE has advised cooperative education coordinators to enroll youth apprentices in the diversified cooperative education program in their local schools and claim one-half instructional credit for each hour spent on the job per week/per semester. This arrangement is expected to resolve the problem, at least until the number of youth apprentices grows significantly.

WISCONSIN: YOUTH APPRENTICESHIP PROGRAM

PROJECT DESCRIPTION

In April 1991, the Governor's Commission on a Quality Workforce concluded its review of Wisconsin's vocational education opportunities in relation to workforce requirements and recommended that the state enhance the system of career exploration and guidance for secondary students. Among the laws enacted that summer was one establishing the youth apprenticeship program, which is a two-year, secondary-school option for juniors and seniors. It combines academic, technical, and occupational instruction and work-based learning supervised by an employer. Students who master the targeted program competencies and meet district requirements earn both a high school diploma and a Certificate of Occupational Proficiency from the Department of Industry, Labor, and Human Relations (DILHR). Youth apprenticeship programs are designed to prepare participants to attend a technical college with advanced standing, apply to a registered-apprenticeship program, obtain a job, or seek admission to the state's university system.

DETAILS OF YOUTH APPRENTICESHIP MODEL

Across occupational areas and varied local arrangements in Wisconsin, local youth apprenticeship programs include four key components that reflect the goals and priorities of state planners. First, applicants for youth apprenticeships must meet certain criteria: They must be on target to graduate from high school, participate in an appropriate career exploration experience, and achieve a satisfactory rating on Wisconsin's 10th grade gateway assessments of academic proficiency (which have been authorized but will not be fully in place until the 1996 school year). Second, youth apprenticeships must include structured, sequenced classroom instruction that links academic and vocational learning; curriculum in both areas must be integrated and competency based. Third, a skilled workplace mentor must provide work-based learning that follows a systematic schedule of competency-based work activities. Fourth, successful completers earn high school diplomas and certificates of occupational proficiency, based on demonstrations of prerequisite academic skills, familiarity with basic career options, and ability to apply successfully for the training position offered by the employer. Completers are eligible to seek

admission to baccalaureate programs or apply for advanced standing in registered-apprenticeship or technical college associate degree programs.

In addition to these components, Wisconsin has also established requirements for local projects. Youth apprenticeship programs must be operated by local consortia that include representatives of secondary schools, technical colleges, employers, organized labor, and private Industry Councils (PICs). Each consortium must design its project to meet state requirements with respect to equity, admissions, content, and accountability; ensure coordination with the local schools; and market the program to parents, students, employers, and other community members. Youth apprenticeship business partners must provide work-based learning opportunities in occupational areas approved by the DILHR, based on industry standards. Businesses must also provide their youth apprentices with at least three semesters of paid employment at the minimum wage or higher, supervision by trained personnel, and exposure to a range of occupational areas in the industry. Summer employment is encouraged. Secondary and postsecondary schools are to articulate youth apprenticeship requirements, provide appropriate evaluation and credit, and monitor students' experience to ensure optimal integration and achievement.

ROLE IN RELATION TO OTHER SCHOOL-TO-WORK PROGRAMS IN THE STATE

Youth apprenticeship, Tech Prep, and college preparation are the three options available to secondary students beginning in the 11th grade in Wisconsin. Students will be able to change their minds and adjust the focus of their postsecondary employment and education plans, because both Tech Prep and youth apprenticeship options are intended to prepare students to meet state university course admission requirements. The first stage of all three options is completing the basic education program, which covers core subjects through grade 10. The state's long-term plan calls for development of a Wisconsin Student Assessment System that will monitor students' progress in core subjects at certain grades, culminating with a gateway assessment in grade 10. This performance-based assessment will cover reading, writing, computation, scientific literacy, problem solving,

analysis, and critical thinking. The goal of the assessment system is to ensure that students enter career pathways with the knowledge and skills required for productive participation in the program they choose. The current target date for putting the new assessments in place is the 1995-96 school year. Wisconsin policymakers envision a statewide system of guidance and counseling support services that enable 10th graders and their parents to make informed decisions on how to manage the school-to-work transition. A system of innovative career-guidance programs, including at least five career-counseling centers, is being developed to help expand students' understanding of career options and to provide up-to-date information about labor market trends and training opportunities in industries with career pathways and potential for good wages.

GOVERNANCE STRUCTURE

LEAD AGENCY

The former superintendent of the Department of Public Instruction and the former director of the Bureau of Apprenticeship Standards (BAS) in DILHR provided the impetus for the creation of youth apprenticeship in Wisconsin. The state legislation gave DILHR the responsibility for implementing the program in 1991. As the program has evolved and personnel have changed, the agency responsibility has also changed. In January 1993, the Governor's Office for Workforce Excellence, which is attached to DILHR, was created to promote expansion of youth apprenticeship, encourage the development of Tech Prep consortia, and develop innovative career-guidance programs. Staff previously in BAS were assigned to the new office.

Youth apprenticeship planning has been guided by the Youth Apprenticeship Advisory Council. This council—with representatives from vocational education, secondary education, business, organized labor, and technical colleges—has responsibility for overseeing the operational standards of the youth apprenticeship program and recommending improvements in the overall school-to-work transition system. Under the terms of the governor's budget proposal for 1994-95, this body would be called the Council on Workforce Excellence, and its executive director would chair the advisory council,

the Occupational Information Coordinating Council, and the Jobs Council, as well as serve on the State Board of Vocational, Technical, and Adult Education.

COLLABORATING AGENCIES AND THEIR ROLES

DILHR currently establishes guidelines and standards for youth apprenticeship, registers and provides technical assistance to local programs, identifies new occupational areas with the help of trade and industry leaders, approves statewide curricula, staffs the advisory council, and issues Certificates of Occupational Proficiency to completers. PICs formed under JTPA participate in local youth apprenticeship consortia, which involve many agencies and businesses in planning and implementing youth apprenticeship projects. Representatives of each technical college district negotiate local agreements for awarding dual credit and articulating secondary and postsecondary programs.

PRIMARY INTERMEDIARY AGENCY

Wisconsin is unique in that a state agency has temporarily assumed the role of intermediary. Within the Department of Administration, through which all grants to the state flow, the governor created a temporary Office of School to Work Transition (SWT) to promote school-to-work policies. This office provided policy coordination of interagency activities related to school-to-work transition to accelerate youth apprenticeship institutionalization. It was initially headed by the former superintendent of public instruction, who has been a strong advocate of youth apprenticeship. SWT's mission focuses on policy development and integration, rather than program implementation.

PROJECT IMPLEMENTATION

USE OF DOL AND CCSSO GRANTS

The CCSSO grant funded the work of the K-12 Guidance Implementation Panel to develop recommendations on building an academic and career information system that provides effective support for students' decision making. The state contracted with JFF to (1) conduct focus groups with those intended to use the proposed system for the purpose of validating the Panel's recommendations and (2) produce a final report,

Wisconsin Focuses on Career Guidance. Wisconsin is using more than half of the DOL grant to support the development of an interagency governance structure and to work toward institutionalizing youth apprenticeship within the state.

NEXT STEPS

Wisconsin has expanded the youth apprenticeship system to include 120 students and add financial occupations in the fall of 1993 and, by the following year, to have 400 to 500 apprentices at 12 sites and to add health occupations. Career guidance and counseling have been identified as high priorities, and a proposal to allocate \$1.5 million of the state budget to expand a "resource center" approach to guidance has been made. Establishing the new guidance and counseling centers will require significant effort. Developing curriculum and standards for the health industry and other areas will be a top priority, to ensure they are available in the fall of 1994.

CHALLENGES TO BE RESOLVED

How can the state institutionalize youth apprenticeship? The state's goal is to institutionalize a statewide youth apprenticeship system. To accomplish this, the state must continue to expand the program. However, the number of high school graduates who enroll in four-year colleges has historically been used in Wisconsin as an important indicator of educational productivity. Because youth apprenticeship does not necessarily maximize local performance on this indicator, secondary and postsecondary educators, business, labor, parents, and students must learn to see youth apprenticeship as a viable alternative to college prep and other traditional opportunities. Persuading the community to accept youth apprenticeship as an integral part of the educational system and to view its outcomes as a desirable form of educational productivity is a prerequisite for institutionalization. The effectiveness of the new career-guidance centers, the marketing efforts of teachers and industry representatives, and—most of all—the certified skills of pilot program graduates are expected to win broad-based public support for institutionalization of youth apprenticeship.

What agency gets primary guardianship of youth apprenticeship? The state legislation placed youth apprenticeship in DILHR because of its traditional role in employment and training, as well as apparent conflicts between the Department of Public Instruction and the Board of Vocational, Technical, and Adult Education. Meanwhile, in the past two and a half years, staff in DILHR, the Department of Public Instruction, and the State Board have worked closely to develop curricula and standards and provide technical assistance for implementation. Two new offices were created in 1993—one in DILHR that is charged with program implementation and the other in the Department of Administration that is responsible for policy and interagency support for youth apprenticeship. The original staff have been reassigned to these offices. How the offices will coordinate their efforts over time and how the technical college system will figure into the plans remain to be seen.

What is the best way to persuade the postsecondary technical and four-year colleges to accept youth apprenticeship training? Successful implementation of youth apprenticeship requires the support and acceptance of postsecondary institutions. The technical college system is decentralized; youth apprenticeship programs in each college's region must develop local articulation agreements to capitalize on overlaps between secondary and postsecondary training curricula and facilitate admission at the appropriate levels for students who choose to continue training after high school. Technical colleges have raised the question of secondary faculty qualifications and indicated that dual credit will be offered only for courses taught by secondary faculty who also have technical college certification. Legislation has been proposed to address these issues and to establish cross-system credentialing. Meanwhile, youth apprenticeship programs struggle to coordinate their offerings with postsecondary criteria that vary by community.

What is the best way to integrate academic and workplace curriculum? One of the special features of youth apprenticeship is the integration of academic and work-based learning; it is also one of the most difficult to accomplish. Local sites are using applied academics in the classroom and designing integrated curricula that

reflect the experiences of youth apprentices at the work site. Developing effective and efficient curriculum requires teachers to spend some time at the work site, learning about the industry and identifying opportunities for applied academics and collaborating with each other over interdisciplinary lessons. Planning time scheduled for 50-minute periods in a regular school day does not offer suitable opportunities for creating integrated lessons; such collaborations require more extended blocks of time for teachers to work together. Summer internships and curriculum-writing contracts may provide better occasions for learning and collaboration, but these options may also compete unsuccessfully with high school teachers' traditional summer activity and employment patterns.